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1. REPORT DATE <b>SEP 1955</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-1955 to 00-00-1955</b>	
4. TITLE AND SUBTITLE <b>Airborne Missions in the Mediterranean</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Air Force Historical Research Agency, 600 Chennault Circle, Maxwell AFB, AL, 36112-6424</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

101-74  
1942-1945  
C.2  
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HQ AFHRA  
600 CHENNAULT CIR  
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**AIRBORNE MISSIONS  
IN THE MEDITERANEAN  
1942 - 1945**

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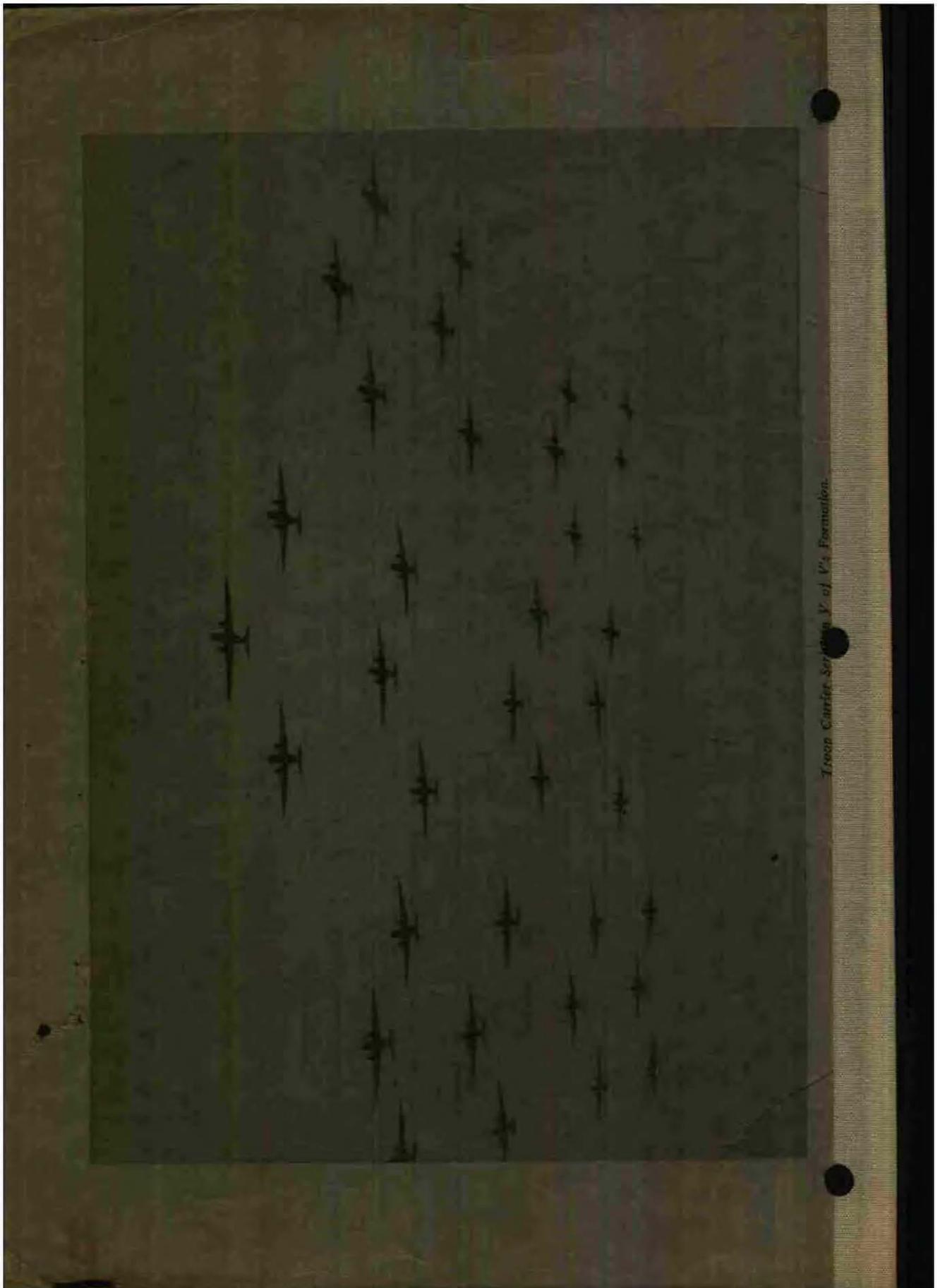
USAF HISTORICAL STUDIES: NO. 74

Handwritten notes in red ink: "CMB", "edos", "1942-1945", "76-101".

**AIRBORNE MISSIONS  
IN THE MEDITERRANEAN  
1942-1945**

USAF Historical Division  
Research Studies Institute  
Air University

Handwritten numbers: "2-2689-14", "00916787".



*Troop Carrier Squadron V of V's Formation.*

USAF HISTORICAL STUDIES: NO. 74

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*September 1955*

3-3689-14  
02916787

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Air Force or the Air University.

### **Foreword**

This monograph treats the airborne missions flown by American troop carrier units in the Mediterranean area during World War II as case histories in the development of a type of warfare in which the United States had no previous experience. For this reason much attention is given to the background of plans, preparation and training preceding the missions and to the impact of the missions on the development of doctrine.

As might be expected the history of these unprecedented operations deals with mistakes and mishaps as well as achievements. The difficulties and problems of airborne operations are carefully examined; at the same time the monograph brings out the tremendous value of vertical warfare when employed under proper conditions.

This study was written by Dr. John C. Warren of the USAF Historical Division, Air University, Maxwell Air Force Base, Alabama. The original of this monograph and the documents from which it was written are in the USAF Historical Division, Archives Branch.

Like other Historical Division studies, this history is subject to revision, and additional information or suggested corrections will be welcomed.

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## Background

ON THE NIGHT of 7/8 November 1942 the United States Army Air Forces flew its first combat airborne mission. As part of the Allied invasion of North Africa (TORCH), 39 C-47's of the 60th Troop Carrier Group set out from England, carrying a battalion of paratroops to occupy airfields in Algeria near the city of Oran.

At that time the United States had had only two years of experience with airborne operations, and that experience had been on a very small scale. An experimental parachute platoon had been organized in July 1940, partly under the stimulus of the spectacular success of German airborne operations in Norway and the Low Countries, and had made its first group jumps on 22 August. In September 1940 the platoon had been expanded into a battalion, which was soon followed by three more. In February 1942 the four battalions became regiments, and in August of that year an infantry division was split to serve as cadre for two airborne divisions. However, until November 1941 the AAF had never dropped more than one company at a time and had rarely been able to do that.

This meager achievement resulted from an extreme shortage of transport planes and pilots. As early as February 1933 the Air Corps had set up transport units to provide air freight service for the depots of its Materiel Division, but, limited to that function, these units grew very slowly. When war broke out in 1939, the Materiel Division had only one transport group of four squadrons with nine or ten planes apiece. In addition to these, the Air Corps had nearly a hundred transport aircraft in the hands of tactical units which used them individually as part of the unit transportation. In maneuvers, to be sure, these planes

were usually pooled into temporary organizations to help transport the equipment and ground personnel of air combat units from base to base. Although the United States had pioneered in this use of transports beginning in 1931, no steps had been taken to organize them. It was noted in September 1939 that ". . . transport squadrons have had to be improvised for every maneuver GHQ has undertaken."<sup>1</sup>

Driven by an urgent need for fighters and bombers, and influenced by a belief that transports could always be bought "off the shelf,"<sup>2</sup> the Air Corps placed almost no new orders for such craft in 1939 or in the first half of 1940. In June 1940 this policy was abruptly changed, and by the middle of 1942 no less than 11,802 medium transports were on order. However, it had not been possible to buy thousands of transport planes "off the shelf." Exactly 5 were delivered in the last half of 1940, and at the end of the year the Air Corps had a total of 122 transports, mostly obsolescent. Only 133 more were delivered in 1941. It is hardly surprising that in June 1941 the AAF could not spare a dozen planes for paratroop training and that it had to strain its resources to provide 39 planes for airborne operations in the November maneuvers of 1941.<sup>3</sup>

For three or four months after Pearl Harbor the lack of cargo planes was aggravated by the desperate need for air transport during mobilization. In January and February 1942 complaints were made that Fort Benning, the center of airborne training, had had no planes assigned to it since 7 December 1941, although a few "miscellaneous" transports had been sent there on loan. Even in March, the AAF A-3, although agreeing that Benning needed a transport group for its air-

borne activities, held that the planes simply could not be spared.<sup>4</sup>

In one sense it was fortunate that so few transports were on hand in 1941, for in September of that year the first C-47's were delivered to the AAF, thus making obsolete for airborne operations all types previously procured. None of these earlier planes were ever used on an airborne mission. The C-47 and its close relative, the C-53,\* took over completely the troop carrier assignment. In the last year of the war the C-46 was used to a limited extent in some places, but in the Mediterranean the monopoly of the C-47 and C-53 was unbroken. No other American planes dropped paratroops or towed gliders into hostile territory in that theater during World War II. A few British planes were used there to tow gliders, but the British produced no planes suitable for paratroop operations. Consequently, they too relied on the C-47, which they called the Dakota. Some RAF units were equipped with them but in the Mediterranean theater every large mission undertaken by British paratroops was flown by American troop carrier units.

The C-47 was exceedingly popular with pilots and paratroops alike, and its popularity was well deserved. By later standards it was small, but it held twice as much as its predecessors. In paratroop missions it carried a normal payload of 2½ to 3 tons or 14 to 18 troops. This was about two-thirds of its capacity in operations where it could be unloaded at leisure on the ground. The largest weapon it could carry for a paratroop mission was the 75-mm. pack howitzer, which consequently became the principal artillery of American paratroops. The plane could take off fully loaded from a dirt strip less than 3,000 feet long. With extra fuel tanks it could make a nonstop flight of 1,500 miles. It cruised at 150 miles an hour, no great speed even in 1941, but its slowness was not wholly a disadvantage, for it could slow down to 110 miles an hour or less and remain stable while paratroops made their jump. Its door, 84 inches wide in the standard models, made a convenient exit. Another feature which made it popular with crews and passengers alike was its ruggedness. Shot full of shell-holes, it held together. With only one of its two engines working, it could stay in the air for a hundred miles.

\*The C-53 differed from the C-47 chiefly in not being adapted for carrying cargo.

Besides its supremacy in the airborne field, the C-47 was by far the most widely used of American medium transports for all sorts of work. By August 1942 only 524 C-47's and C-53's had been delivered.† By May of the next year mass production was achieving an output of over a hundred a month and the end of the transport shortage was in sight, but throughout 1942 there were nowhere near enough C-47's to meet the demand.<sup>5</sup>

This is not surprising, for the transport units were expanding mightily to meet the needs of the expanding air force. In October 1939 three additional transport squadrons had been created, raising the total to seven. A year later only one more had been activated, but plans were approved for immediate expansion to 6 transport groups, and 18 transport squadrons, half under Materiel Division, and half under GHQ Air Force. The Materiel Division urged that a wing be created to command its groups, and accordingly in January 1941 the 50th Transport Wing was activated at Wright Field.<sup>6</sup> By February all the new groups and 20 squadrons were in existence, but until Pearl Harbor no more were created and the 12 new squadrons remained far below strength, especially in pilots and planes. For example, the 12th Transport Squadron had no planes assigned to it until August and only three at the end of the year.<sup>7</sup>

As part of its expansion after the United States entered the war, the AAF decided to double its transport units during 1942. Six more groups with an allotment of 35 aircraft each were to be activated. By spring, a further step had been taken, the enlargement of transport groups to an authorized strength of 4 squadrons and 52 planes apiece. This was the official allotment of a transport (troop carrier) group until the end of 1943, but during the summer of 1942 it was exceptional for any such units in the United States to be close to their authorized strength. Trained personnel and modern planes were spread thin and constantly juggled.<sup>8</sup>

Amid this expansion revolutionary changes were made in the commands responsible for airborne operations. On 17 March 1942 Lt. Gen. Leslie J. McNair, chief of the newly created Army Ground Forces, proposed that an Airborne Command be set up to direct and coordinate the train-

†At that time the AAF had only about a score of heavy transports plus some converted B-24's, all needed for the long-range activities of Air Transport Command.

ing of airborne forces. The Airborne Command (later the Airborne Center) was established on 23 March 1942, replacing the Provisional Parachute Group, which had been formed in 1941 under the Infantry School. Then, as a natural sequel, an Air Transport Command was set up on 30 April 1942

to organize and train Air Transport units for all forms of Air Transport with special emphasis on the conduct of operations involving the air movement of airborne infantry, glider troops and parachute troops . . . The primary initial objective will be to meet specified requirements for air-borne forces.

To accomplish its mission it was given the 50th Transport Wing and 12 transport groups, all there were at that time in the United States.<sup>9</sup>

On 20 June 1942 the new Air Transport Command was redesignated Troop Carrier Command, and the names of its subordinate units were likewise changed from "Transport" to "Troop Carrier."<sup>\*</sup> The primary mission of the troop carrier units was described as transport of parachute troops, airborne infantry and glider troops. Performance of air freight activities *within* theaters was to be accomplished by troop carrier units temporarily attached to the theater air service command.<sup>10</sup> Evidently the airborne mission of the troop carrier units was foremost in the minds of those who christened them. In practice, the unanticipated and overwhelming demand for air transport by both air and ground forces overseas often diverted the troop carriers from their primary task. Failure to foresee this demand has been criticized as a mistake which delayed troop carrier expansion beyond the 12-group limit.<sup>11</sup> One may question whether in 1942 a greater expansion by the troop carriers would have been possible without grave prejudice to other parts of the AAF program.

One reason for the creation of special troop carrier and airborne infantry commands was the emergence of a specific airborne mission. In January 1942 none had existed. By March an airborne assault in divisional strength was contemplated as part of BOLERO, the build-up for a cross-channel invasion then scheduled for April 1943. For this purpose Air Transport Command

<sup>\*</sup>By the same order the name Air Transport Command was given to the former Ferrying Command. It was made responsible for inter-theater air transportation. Air Service Command continued to provide air freight within the United States for the AAF but did so by utilizing commercial airlines on a contract basis.

(Troop Carrier Command) was directed early in May to have four transport groups ready for movement to England by 1 August and four more by September. The command did its best, even to curtailing the training of its other groups, but it could not produce pilots and navigators overnight. Indeed, it had difficulty in getting enough experienced pilots to serve as instructors. By September only two groups, the 60th and 64th, had been sent to England, and the 62d was preparing to leave. Even within those three groups there was a great difference in quality.<sup>12</sup>

First and best of the three was the 60th, which had been activated in December 1940. But even the best was none too good. When inspected at Westover on 26 May 1942 (just one month before its first air echelon set out for England) the group was almost a new creation: although it had a fine nucleus of experienced pilots of whom 18 had over 1,000 hours to their credit, it had only 36 out of 60 authorized navigators. All but one of the navigators were "fresh out of school with about 50 hours." Only 27 of its 52 planes had arrived.<sup>13</sup>

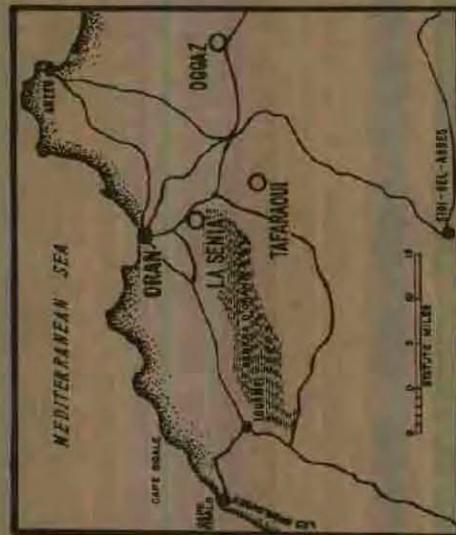
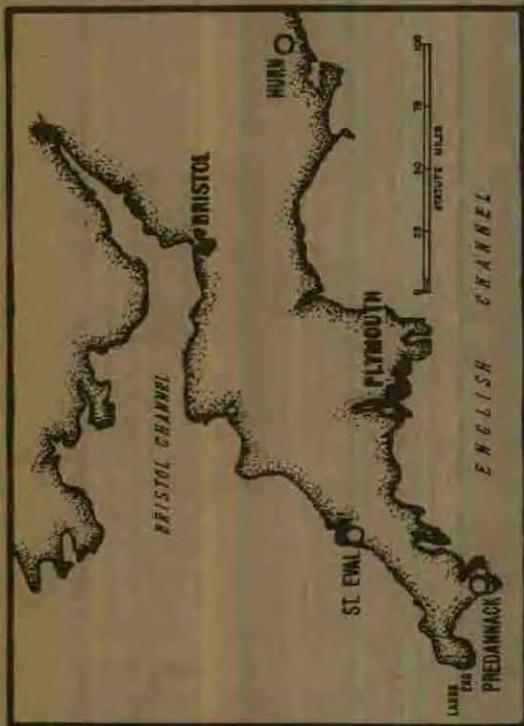
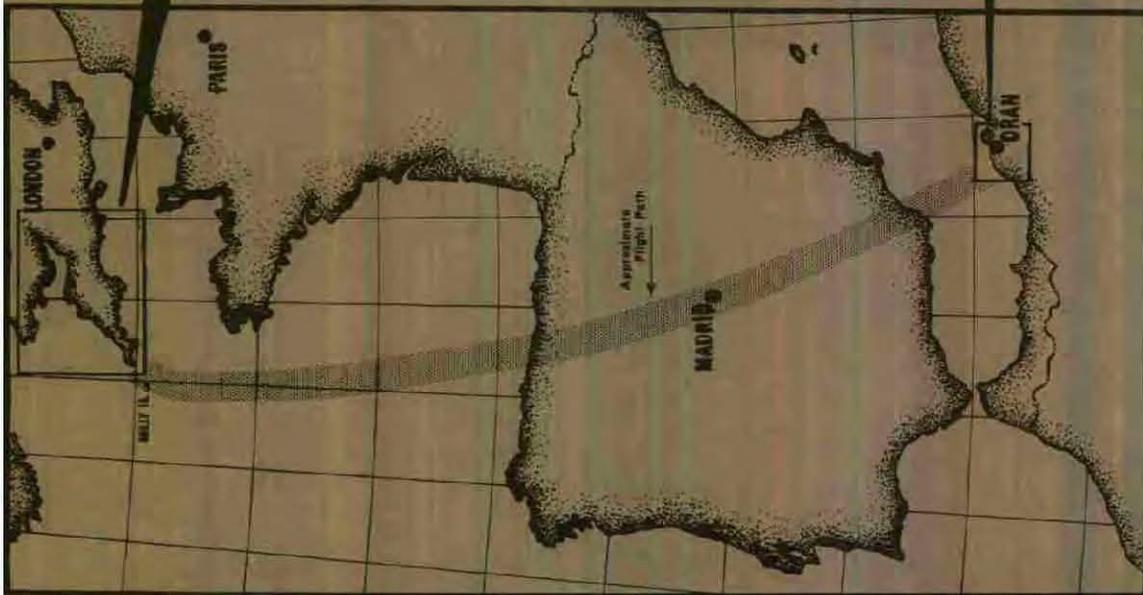
The 64th Group, which began its move overseas in late July, did not compare with the 60th. The 62d was still less experienced. It did not dispatch its first air echelon to England until 22 September. The delay was needed to provide its men with a minimum of unit training. Most of its pilots had graduated in midsummer from TCC's five-week transition training course, a course in which the students did not solo until the next-to-last week.<sup>14</sup>

Headquarters, 51st Troop Carrier Wing landed in Scotland on 1 September 1942 to command the troop carrier groups in the U.K. It had been activated on 1 June specifically for service overseas, the 50th Troop Carrier Wing being held in the United States to conduct training under the Troop Carrier Command. The 51st was assigned directly to the Eighth Air Force. Action taken early in the summer to set up a troop carrier command in England had been rescinded in July on the supposition that troop carriers overseas would "normally be assigned to support commands."<sup>15</sup>

Early in September, just as the 51st Wing was preparing to function, the decisions were taken which two months later sent the troop carriers into action in North Africa. Throughout the North African campaign the wing and its three groups constituted the entire Allied troop carrier force in that theater of operations.

**TAKE-OFF POINTS & DESTINATION  
OF PARATROOP TASK FORCE**

7-8 NOVEMBER 1944



**LEGEND**

- Airfields
- ▨ Dry lake bed
- Main Roads

## The North African Missions

### Plans and Preparations for TORCH

THE ANGLO-AMERICAN invasion of North Africa (TORCH) was conceived in July 1942. By the end of the month the enterprise had been approved by the British and American governments and cross-channel operations had been indefinitely postponed. However, detailed planning for TORCH was delayed for many weeks by uncertainty as to objectives. Lack of shipping apparently limited the operation to two major landings. The American chiefs of staff favored assaults on Casablanca and Oran. The British preferred Oran and Algiers. Between 3 and 5 September the question was resolved in favor of attacks in all three areas.

Supreme command in TORCH was exercised by Lt. Gen. Dwight D. Eisenhower through Allied Force Headquarters (AFHQ), over which he presided. Three task forces were set up for the assault. The Western Task Force, sailing directly from the United States, was to attack French Morocco and take the port of Casablanca. The other two forces would be launched from England. The Eastern Task Force, predominantly British, was to take Algiers and then drive into Tunisia in an effort to occupy it before the Axis could get substantial forces into Tunis and Bizerte. Oran, 200 miles west of Algiers and 230 miles east of Gibraltar, was to be taken by the Center Task Force, an American organization commanded by Maj. Gen. Lloyd Fredendall. The air elements of the Center Task Force were to form the Twelfth Air Force under Brig. Gen. James H. Doolittle. D-day for the invasion was set for 8 November.

It was evident that control of the airfields of La Senia and Tafaraoui outside Oran would be

of vital importance to the whole African operation. They were the only good airfields in western Algeria.\* French air forces based on them might, if not neutralized, be a fatal hindrance to TORCH. Full use of the port of Oran was almost essential to Allied success. Control of the air was a prerequisite to effective use of the port, and control of the airfields was a prerequisite to lasting control of the air. Temporary control the Allies hoped to achieve with naval aircraft, but they would have to be relieved in two or three days by land-based planes. Once the Oran airfields were taken, fighter groups waiting at Gibraltar could fly in and carry on the air offensive.

La Senia was less than 5 miles and Tafaraoui about 15 miles south of the port of Oran. However, the port, surrounded by cliffs and bristling with fortifications, was an unpromising object for a frontal attack. The Allies proposed to flank it by landings at Arzeu and Les Andalouses. Arzeu lay about 30 miles east of the airfields with some difficult country between. Les Andalouses, to the west, was about 35 miles from La Senia and 45 from Tafaraoui. The distance to Tafaraoui was greater because the road had to go around a dry lake known as the Sebkra d'Oran.

The distance of the airfields from the invasion beaches led the Allies to entertain the idea of taking them with airborne troops. The idea was not unopposed. Some experienced officers called it "harebrained." Air Marshal William L. Welsh, the ranking member of Eisenhower's air staff for TORCH, urged that the troop carriers be conserved for use in the race to Tunis after D-day. He was overruled, and about 8 September it was

\*Tafaraoui was the only hard-surfaced field between Port Lyautey on the Atlantic coast of Morocco and Algiers.

decided that the 2d Battalion, 503d Parachute Infantry Regiment, the only American airborne unit then stationed in the U.K., would be sent on a mission against the Oran airfields. It was a foregone conclusion that the relatively experienced 60th Troop Carrier Group, which had been training with the battalion since 17 August, would provide the lift.<sup>1</sup>

On 12 September 1942 a command, known as the Paratroop Task Force was set up to prepare the coming operation. In accordance with a decision made on or before the 8th, Col. William C. Bentley was made commander of the task force. He was an experienced AAF officer and, as former attaché in Morocco, had exceptional knowledge of North Africa. He was allotted a headquarters of 4 officers and 73 enlisted men to assist him. Under him were the 60th Group and the paratroop battalion.<sup>2</sup> It was agreed from the start that Colonel Bentley would be in command of the task force during the period of preparation and during the flight to Oran. However, Lt. Col. Edson D. Raff, commanding the paratroops, had asked and obtained from Lt. Gen. Mark W. Clark at General Eisenhower's headquarters an explicit assurance that he should be in full command of his paratroops from the time they hit the ground until contact was made with the rest of the Center Task Force. For an air officer to be in command of an airborne mission during the flight to the objective, with command of the airborne troops passing to their own commander once they reached the ground, later became standard procedure for American forces in World War II.<sup>3</sup>

At first Colonel Bentley had intended to locate his headquarters with the paratroops, but the need to keep in close touch with higher commands preparing for TORCH kept him in London. Since Raff's battalion was at Ramsbury and the 60th Group at the neighboring base of Aldermaston over 50 miles from London liaison with the two field units was rather difficult, but the decision was sound. Less than a year later the Sicilian campaign was to demonstrate the difficulties and dangers of dividing the planning of a major operation between several widely separated headquarters. Bentley himself had had almost no experience in airborne operations. However, since his S-1, S-2, S-3, and S-4 were borrowed from the 60th

Group and the 503d Regiment, he did have experienced officers to assist him.

On 14 September the 60th Troop Carrier Group was transferred from the Eighth Air Force to the newly created Twelfth Air Force, and at a secret meeting that day the officers of the group were informed in guarded terms of a coming mission. Similar preliminary notification was given on 20 September to the paratroop officers.<sup>4</sup>

For this mission it was of prime importance that the vulnerable C-47's take off from fields far from enemy radar and interceptors. To economize on fuel for their long trip, it was also important that the fields be as near as possible to Africa. Land's End, the peninsula which forms the southwest tip of England, best fitted these specifications. On 12 October a survey party recommended Portreath, listing the smaller field at St. Eval as second best. St. Eval was chosen, but between 20 and 23 October it was decided that to avoid congestion the force should be split between St. Eval and Predannack, a place about 35 miles southwest of it and only 30 miles from the promontories of Land's End.<sup>5</sup> At about the same time the number of planes on the mission was increased from 36 to 39. Of these, 20 would depart from St. Eval and 19 from Predannack.<sup>5</sup>

The question of what route the paratroop mission should take was difficult and delicate. The direct way to Oran was across Spain, a neutral country in which Axis agents and sympathizers were numerous and influential. The alternatives were a detour to the east across Vichy France or a detour to the west over the Atlantic. Discovery over Spain might bring about disasters of which the destruction of the force by Spanish guns and fighters was the least serious. Spain might seize the pretext to enter the war on the side of the Axis. Worse yet, and more probable, the Germans might be warned in time to jeopardize the whole African venture. However, the fear that the mission might be intercepted over France or lost over the Atlantic led General Eisenhower on 12 October to choose the Spanish route. The paratroop mission and it alone was authorized to fly over Spain.<sup>6</sup>

This route gave the troop carriers a relatively straight flight about 1,100 miles long. It had to

<sup>6</sup>Hurn in Hampshire was extensively used for troop carrier movements to Africa after D-day, but none of the planes on the paratroop mission took off from that field.

be a one-way, nonstop trip: the danger of discovery if the force landed at Gibraltar was prohibitive; moreover, the small airfield there was already crowded with fighters. If the pilots could not land at North African airfields, they would have to land in the desert.<sup>7</sup> The paratroops were to jump in Africa at H-hour, 0100 GMT. At the cruising speed of 135 miles an hour the flight would require eight hours. Take-off was therefore set for 1700 hours. On this schedule the mission would be under cover of darkness within half an hour after its start.

No fighter escort was at first provided. Lack of space on the crowded Cornish airfields and the risks of landing fighters at night seemed to tip the scales against it. The possibility of enemy interception, however, led to repeated requests for both an escort during the dangerous twilight period and a diversionary sweep over the French coast. These requests were backed by Twelfth Air Force and by ETOUSA and resulted on 27 October in an agreement by RAF Fighter Command to provide both the escort and a diversionary sweep over Brittany. On 5 November a flight of Spitfires from Portreath and six Beaufighters from Predannack were assigned to escort the mission. The Spitfires would return at last light. The Beaufighters, presumably equipped for night fighting, would stay with the troop carriers as long as their leader deemed worthwhile.<sup>8</sup>

Although night brought safety, it also made recognition of an objective very difficult. To overcome this difficulty, a British ship, the *Alynbank*, was to be stationed off the African coast about 35 miles northwest of Oran. At 2330 on D minus 1 a radio beacon aboard the ship would begin sending homing signals on a frequency of 440 kilocycles, simulating those of an Italian beacon. The radio compasses aboard the planes would pick up the signals and guide the pilots in. The *Alynbank* also had a signal light, which was to begin flashing a V for 5 seconds at 30-second intervals as soon as the troop carriers were observed within 20 miles of the ship.

Great risks were taken to guide the force from the *Alynbank* to its destination. A secret agent (BANTAM) was to operate a radar beacon of the type later known as Eureka in the vicinity of Tafaraoui. The planes of the force commander, the group commander and the squadron leaders

were equipped with Rebecca, a receiving set enabling them to home on his signals.\* Efforts were also made to have flares set off to mark the field.<sup>9</sup>

The use of radio and radar aids was a notable innovation. One point, however, deserved more attention than it apparently received. The effective range of the beacons was little known, but was probably not over 30 miles. They were situated at the end of a 1,100-mile route. A deviation of two or three degrees would leave the pilots astray in the dark out of range of the beacons.

The paratroop battalion was to jump at 0100 over Tafaraoui and take it. Tafaraoui, an all-weather field, was more valuable than La Senia. It was also a safer objective. La Senia, close to the outskirts of Oran, would be hard to approach without discovery, was reportedly defended by several batteries of anti-aircraft, and could be easily counterattacked by French troops from the port. Planes could fly unobserved to Tafaraoui by way of the Sebkra d'Oran and have only machine-gun fire to cope with over the drop zone. Once Tafaraoui was secured, a company of paratroops was to be sent to neutralize La Senia. However, no attempt would be made to hold the latter field. The company, having done its work, would withdraw to join the main body in the defense of Tafaraoui. A small detachment would also be sent out to cut communications near Lourmel, thus facilitating the advance of the forces landed at Les Andalouses.<sup>10</sup>

During October, General Clark made a secret trip to North Africa and was assured that the French would not resist an American landing. (The assurances were sincere, but those who made them later proved unable to control the situation.) In view of the opportunity thus presented, General Eisenhower decided on 27 October to avoid the paratroop drop at Oran if possible and, instead, to use the force to seize bases in Tunisia. On the 28th a meeting presided over by General Clark and attended by Raff and Bentley produced a double-barreled plan. If the French showed fight, the old plan, henceforth known as "Plan A," would be adhered to. If they were indeed ready to join the Allies, "Plan B" would go into effect. According to the latter plan, the paratroop task force would conserve its planes and men by land-

\*For fuller discussion of this type of navigational aids see Chapter 4.

ing on La Senia by daylight on the morning of D-day. It would then stand ready for a mission against one of the airfields around Tunis or, if necessary, at Bône.

Dispatch of Allied air units from England to Africa had been delegated on 10 October to RAF 44 Group and to the VIII Fighter Command, and Allied Force had directed on 23 October that all air movements to Africa would be made on orders of a control center at Gloucester operated jointly by 44 Group and VIII Fighter Command. Orders for dispatch of the paratroop task force from England were to be sent in the clear to headquarters of 44 Group, direct from an Allied Force command post set up at Gibraltar. If the French attitude called for the war plan, the command post would send the signal "Advance Alexis." If a peaceful reception was expected, "Plan B" would be called for by the phrase "Advance Napoleon." Other signals were provided for cancellation or postponement of the mission.<sup>11</sup>

Tentative plans were made for the use of paratroops on D-day by the Western and Eastern Task Forces, but none reached fruition. The Western Task Force had asked for paratroops early in September. Late in the month its plans had advanced so far that the War Department designated the headquarters and another battalion of the 503d Parachute Infantry for shipment to England for use in an airborne mission to Morocco. However, on 8 October, Allied Force decided against the mission. It considered, and with good reason, that the 62d and 64th Troop Carrier Groups were insufficiently prepared for such an enterprise, especially since the airborne units would not reach England in time to train with them. The War Department promptly canceled the shipment. On 14 October a new plea came from Western Task Force for as little as half a battalion of paratroops to take the airfield at Port Lyautey, but Eisenhower, left with only one battalion of American paratroops,<sup>9</sup> replied that he had none to spare.<sup>12</sup>

About 20 October, at the suggestion of the commander of the British airborne division, Maj. Gen. F. A. M. Browning, who felt there were "tremendous possibilities" for airborne troops in the North African campaign, a British "Paratroop

Force" was set up. The force consisted of about 400 troops from 1 Parachute Brigade. Since the British could not provide them with planes, 39 of the 64th Troop Carrier Group's C-47's were allotted for their use. By 25 October the force was scheduled to take off for Africa on D minus 1 in support of the Eastern Task Force in the Algiers area. Just what it was to do is still obscure. In any case its flight to Africa was postponed to D plus 1 and was not a combat mission.<sup>13</sup>

Although its subordinate groups had been transferred to Twelfth Air Force, the headquarters of the 51st Wing remained in the Eighth Air Force until 20 October. Then, probably as a result of Browning's proposals and the increasing interest in troop carrier operations after D-day, the wing was transferred to the Twelfth and given a new commander, Col. Paul L. Williams.<sup>14</sup>

It is a paradoxical fact that most of the joint airborne training conducted by the two units of the paratroop task force was done before that force was set up. On 10 August the 60th Group had been moved to Aldermaston to train with Raff's battalion. On 17 August, 10 planes of the group dropped a company of paratroops. It was the first jump by American paratroops in England. During the next four weeks airborne and troop carrier personnel worked together almost daily and every company in the battalion was dropped repeatedly. On 16 September this training culminated in a drop of the entire battalion by 33 planes of the 60th. Performed at 0930 hours in good weather over a large drop zone, the jump was very successful, perhaps misleadingly so: all the troops landed on the drop zone.

On 26 September the 60th Group flew the battalion to Northern Ireland for what was intended to be a five-day period of maneuvers. At dusk that day a hasty jump, preceded by only a few minutes of briefing, was made by one or two companies of the 503d. The troops landed in a bog two miles from their objective. Bad weather then intervened to prevent any further drops in Ireland.

From then on very little joint training was done. Immediately after the return from Ireland the planes of the 60th began to move to the depots of the VIII Air Force Service Command for modification. A few flights were made early in October with the 503d and with British paratroops. Then

<sup>9</sup>Since the Western Task Force was entirely American and was mounted in the United States, the use of British airborne troops would have raised serious complications.

the operations of the group slowed to a standstill. The only formation flying with the 503d after 14 October was one nine-plane flight on the 21st. Paratroops and troop carriers alike felt that a realistic rehearsal was "essential to the success of the mission." A rehearsal had been scheduled for 21 October, but too many planes were in the depots, and no rehearsal was held.<sup>15</sup>

The modifications to be performed on the planes of the 60th Group were not on the whole particularly difficult,\* but the task fell on an inexperienced organization already strained to the limit. The service command had put 85 percent of the facilities at Burtonwood, its principal depot, to work for TORCH, but even that was insufficient. The load was so great that on D plus 1 a backlog of 106 P-39's was at Burtonwood, still awaiting modification for TORCH. In the interests of security no special priority had been given to the C-47's of the 60th Group, so it was perhaps fortunate that they, too, were not waiting at the depot on D-day. Some of them very nearly were.<sup>16</sup>

While modification dragged on, another difficulty arose. On a long night-flight landmarks would be hard to see and some planes were bound to straggle. All planes on the mission would need navigation instruments, but only four sets were on hand. Consequently, a call was sent out in October for immediate air shipment of 35 sets from the United States. The shipment miscarried, and, despite many messages and a search by XII Air Force Service Command, the 60th did not get its navigation kits. Instead, on the eve of the mission it was given British instruments with which it was totally unfamiliar.<sup>17</sup>

The VIII Fighter Command ordered the 60th Group to send its contingent to the take-off points on 3 November. Since the group then had only seven aircraft at Aldermaston, it was quite unable to comply. The service command had 25 of its planes at Burtonwood and 13 at the Langford Lodge depot in Ireland. One had been detained by weather at Gibraltar, to which it had gone on a practice flight. Exceptionally bad weather pre-

\*The modifications involved installation of flame dampeners, formation lights, rheostats with which to dim the formation lights, blackout curtains, jump bells to supplement the red and green lights normally used to alert the paratroops for a jump, and VHF sets for plane to plane communication. The very short range of the VHF sets made them less liable to interception than command sets and for this reason a decision had been made to use the VHF on the mission. Six planes were to be equipped with Rebecca radar receiving sets.

vented any flights on the 3d, 4th, and 5th, so no planes could return from the depots. Time was running out. To preserve security, plans had been made not to brief the troop carrier personnel until they reached the take-off points, but an impromptu 2½ hour briefing was held at Aldermaston on 5 November for pilots, co-pilots, and navigators.†

On 6 November the weather cleared, and 25 planes were flown to St. Eval and Predannack. Next morning a formal briefing was held. Looking back on it, the pilots felt most keenly the almost complete neglect of Moroccan terrain features and the misleading character of the weather report. Maps and charts were so scarce that most were restricted to the flight leaders. One briefing session at Predannack was largely wasted, because the briefers supposed that the objective was Gibraltar, not Oran. The same thing nearly happened at St. Eval. Dissatisfaction with the briefing was almost unanimous.

Much worse was the lot of 14 pilots who got their planes from the service command on the afternoon of 6 November and, after a night of hectic preparation, flew in to St. Eval and Predannack on the 7th. Their planes were only half tested; their briefing was confined to a few minutes of distracted conversation; and they set out that night on their unprecedented flight hardly able to keep their eyes open. It is significant that five of the six planes which failed to reach the Oran area had been among these late arrivals.<sup>18</sup>

#### **TORCH Mission**

The paratroop task force was to receive its instructions from Gibraltar by 1630 on D minus 1 and was to be ready for a take-off at 1700 GMT under Plan A, if the war plan was announced. As 1630 approached, the planes were in position with their engines warmed. Aboard were 39 officers and 492 men of the 503d and 122 officers and 73 enlisted men of the 60th Group.†† At 1625 word arrived that Plan B, the peace plan, was in effect. The signal "Advance Napoleon" had reached 44 Group at 1615.<sup>19</sup> In accordance with the plan, departure was postponed for four hours in order to permit a landing at La Senia

†The paratroops, who were not to move from their camp at Ramsbury to Land's End until D minus 2, had been given a very satisfactory briefing on 29 and 30 October with terrain models, maps and mosaics. (Journal, 2d Bn 503d PIR)

††Each plane carried a crew of five—pilot, co-pilot, navigator, radio-man, and engineer—standard complement for C-47's on a long flight.

after daybreak. The late announcement caused some confusion, and in the gathering darkness some men were left in their planes for as much as two hours before they learned of the change of plan.

At 2105 the first plane took off, and the last was in the air at 2145. They were to fly in four flights, a lead flight of nine aircraft, and three flights of ten each. Each flight was composed of two four-plane elements flying in echelon to the right and one element of one or two planes. The lead planes of Flights A and B, which took off from St. Eval, were piloted by Colonel Bentley and Lt. Col. Thomas J. Schofield, commander of the 60th Group. Colonel Raff rode in the second plane of the first flight with Maj. John W. Oberdorf as pilot. Maj. Jesse A. Tobler led Flight C and Maj. Frederick H. Sherwood led D.

The force assembled over Portreath at 2200, keeping low to avoid detection by enemy radar, and for the same reason flew westward over the Scilly Islands before turning southward on a course of 225°. This course they held until midnight when far out over the Bay of Biscay they shifted to a course of 177°. These headings made allowance for strong southwest winds which had been predicted and were in fact blowing in over the Atlantic. Holding to the 177° course, the navigators expected to fly on one straight leg over Spain, to the vicinity of the *Alynbank*.

Some planes had straggled during assembly and more did so at each turn. Few were able to keep close formation. Some pilots failed to hold to the prescribed 135 miles an hour, and others climbed or veered to dodge clouds and squalls. Nevertheless, the main body, still flying low, did hold together over the sea.

The weatherman had correctly predicted a front off the north coast of Spain. The task force climbed to 10,000 feet to clear the Spanish mountains, but even at that height the weather was stormy. The flights began to scatter during the climb, and in the bad weather which followed they became completely dispersed. Not more than two planes in any element or three in any flight were able to stay together. It is noteworthy that under these dismaying conditions no one turned back or sought a safe landing in friendly Portugal.

To avoid discovery, the formation lights on the planes had been dimmed and all other lights put

out. So long as formation was maintained, the lights could be seen, but once a pilot was separated from his element by more than about 200 yards during a turn or passage through clouds, he had a hard time finding it again. A few did get back into formation through the use of flashlights and Aldis lamps flashed from the domes. Many pilots asserted that the lights ahead of them went out. Although this explanation was generally accepted, it seems much more probable that they simply went out of sight. Proper analysis of this situation might have prevented a similar dispersion later during a mission against Sicily.

The scattered pilots tried to home on their flight leaders by radio, and for a time the air seemed filled with their voices. Every effort was made to answer them, but very few received a reply either on the VHF or on the command sets. Reception was bad, and the operators had had no time to test the newly installed VHF equipment or to familiarize themselves with it.

All the navigators had been given training in celestial navigation in England, but only two or three proved able to use it successfully. The pilots had harsh things to say of the navigators, but it must be said that they were working under unusual difficulties. Only the flight leaders had much in the way of charts. Only eleven had American instruments, the rest having been given British kits on the eve of the flight. The dome of the C-47 was too small for use of octants below an angle of 30 to 40 degrees. Finally, the clouds, though they opened occasionally, seldom permitted more than sporadic glimpses of the heavens.

Landmarks were also obliterated by clouds and darkness. Several pilots sighted Madrid, and others, flying into the clear on the south coast of Spain, attracted anti-aircraft fire. Some circled until daybreak, waiting to get their bearings. The great majority went by dead reckoning over Spain, and across the Mediterranean. If their data had been correct, most of them would probably have hit the Oran area, but beyond the front they had crossed, a strong east wind was blowing, which had not been predicted in the weather report. As a result, most of the planes were deflected 50 miles or more to the west of their objective and emerged over the Moroccan terrain so neglected in the briefing. To baffle them further, ground fog lay thick at daybreak over the African hills.

Two pilots swerved so far that they landed near Tetuan in Spanish Morocco, more than 250 miles west of Oran. Another pilot landed in that area, unloaded his paratroops to save gas and flew on to Oran. Another, making landfall on an unfamiliar coast, turned west instead of east and finally landed in Spanish Morocco about 180 miles west of Oran. Two planes overran the African coast in dense clouds, probably about a hundred miles west of Oran, and continued southward to land respectively near Ain Aicha and Ksar es-Suk in French Morocco. One landed with empty tanks on the runway at Gibraltar. These six planes and seven plane-loads of paratroops played no further part in TORCH.\*

On the other hand, some pilots made their way to the Oran area approximately on schedule. It is impossible to say who got there first, but from six to nine of them arrived between 0515 and 0615. They had gotten little assistance from the beacons. The *Alynbank*, supposed to broadcast at 440 kilocycles, was signaling at 460, and these signals, when received at all, were unintelligible. One of the early pilots did somehow tune in on the radio; another saw the light; and a third received unspecified signals from the ship. The secret beacon at Tafaraoui was out of action. Its operator had expected the task force to arrive about 0100 under the war plan, and when no planes appeared he destroyed his set.

The two-plane element last to leave Predannack had been delayed a few minutes and never sighted any others until after it reached Africa. The two planes stayed together and were kept on course and approximately on schedule all the way by 2d Lt. Harold L. Kenner, probably the only navigator on the mission to achieve that feat.

The other early arrivals came in one by one. Most of them circled over Cape Figalo, which had been designated as a final rendezvous, but none made contact there with any of the others. They then turned inland, expecting a peaceful landing at La Senia, but those attempting to land there were greeted by blasts of antiaircraft fire. Others were fired on over the coast, Oran, and Tafaraoui. Three were forced down by French fighters.

\*The plane at Gibraltar flew on to Africa on the 10th. The personnel of the two in French Morocco were imprisoned by the French, released on 13 November, and flew in to Tafaraoui on the 20th after doing transport work for the Western Task Force. The three planes and four "sticks" of paratroops in Spanish Morocco were interned until February.

Maj. Clarence J. Galligan, flying the third plane in the lead flight, was one of the first to reach Africa and was probably the first American pilot to land airborne troops on hostile territory. He was fired on by antiaircraft as he crossed the coast and was attacked by a French interceptor over the Sebkra d'Oran. Spitfires drove off the Frenchman, but since Galligan's plane was damaged and losing altitude he decided to land on the bed of the dry lake. He made a safe landing four or five miles from La Senia, marched his crew and 14 paratroops to the edge of the Sebkra and dug in. French planes made passes at them on the way but did not fire. Presently the little group was accosted by a company of French soldiers with a 75-mm. gun. The French were content to keep them under observation until Colonel Bentley arrived in French custody during the afternoon and persuaded Galligan to surrender.

A few minutes after Galligan was attacked, Capt. John G. Evans was brought down by a French fighter on the southeast side of the Sebkra with his engineer wounded and his plane shot to pieces. About 0730 another pilot out of gas landed beside him. After transferring gasoline from the shattered craft to the whole one, they took off early in the afternoon to join the rest of the group, leaving their paratroops and the wounded man behind. About the time Evans was shot down, 1st Lt. Joseph A. Beck was forced down without damage on the south side of the Sebkra by a confused and unaggressive French airman. He was able to take off again later and join the main body of the task force shortly after 0830. One plane was hit by antiaircraft over Tafaraoui and made a forced landing some 25 miles east of it near Arzeu.

The other early arrivals were uncertain as to what to do next. One or two of them reconnoitered the alternate drop zone at Oggaz. It was empty, and they flew back to the Sebkra. There the rest had been flying back and forth and exchanging comments on the situation over their radios. Their tanks were nearly empty, and a landing at La Senia or Tafaraoui seemed impossible. One pilot came down near Lourmel at the northwest end of the Sebkra. The rest followed one by one, spontaneously, motivated only by a desire to land and to concentrate what forces they had. By 0800 there were six or seven planes bunched on the

Sebkra near Lourmel. No sooner had they landed than they were fired on by snipers, and their occupants were forced to take cover.

Between 0600 and 0800 the bulk of the task force had been feeling its way along the unfamiliar coast of Morocco. One group made up of Bentley, Oberdorf, and four pilots from other elements, made landfall about 100 miles west of Oran and were joined soon after by five others. After searching in vain for a landmark, Colonel Bentley landed, found his position by interrogating some Arabs, took off again and headed his contingent eastward toward Oran. Six planes milling about on the coast of Spanish Morocco some 200 miles west of Oran formed into another group with Colonel Schofield as their leader. As they circled out of the clouds, a plane which had landed radioed them their position, and they too, turned eastward along the coast. There was no contact between the Schofield and Bentley groups, though Bentley was only a few minutes in the lead. One of Bentley's group had gone on and landed ahead of him near Lourmel but two more joined him on the way.

About 0810 Bentley sighted eight planes huddled on the Sebkra near Lourmel\* and learned by radio of what had befallen them. At the same time a column of armored cars was seen approaching up the road from Lourmel. If they were French, the men on the Sebkra were in grave danger. Raff was eager to make a jump to meet this threat and to clear out the snipers. He held a brief radio conference with Colonel Bentley, and they decided to drop the paratroops on a hill which dominated the northern edge of the Sebkra and had some cover to shield the men from enemy fire. The formation circled and nine or ten† of the planes with Bentley dropped their sticks of paratroops.<sup>20</sup>

After the jump the Bentley group, except for Bentley himself, landed beside the aircraft concentrated in the Lourmel area. Schofield's six planes and one or two isolated individuals followed them a few minutes later. Colonel Bentley

\*Bentley stated that he saw 12 planes in the Lourmel group, but since all but 8 seem otherwise accounted for, he was probably including all the planes down on the Sebkra. Maj. Jesse A. Tobler who flew in just ahead of him had seen ten planes on the ground, two being quite distant from the rest.

†The number and identity of the planes making the drop varies in different accounts, but there were not more than 12 planes in Bentley's formation, and 2 of them did not drop, one because its door had jammed, another because its troops had been thrown into confusion when a sniper's bullet set off a grenade.

flew on to reconnoiter. He saw fighting going on at Tafaraoui, was fired on by French artillery near La Senia, and landed with engine trouble on the northeast shore of the Sebkra. While he was reporting the situation to II Corps by radio, the pilot who had left his troops in Spanish Morocco flew in and landed beside him out of gas. A few minutes later the French arrived in force and rather apologetically took both planes and their occupants into custody.

Thus by about 0900 on D-day the great flight from England was ended. Of the 33 planes which had reached Oran, 27 were grouped near Lourmel, 5 were scattered about the Sebkra, and 1 was down near Arzeu. It was still possible that their paratroops might play a part in the taking of Tafaraoui and La Senia.

Raff's troops had made a successful jump and had set out to stalk the armored force advancing on the Lourmel road. They were relieved to discover that it was an American column pushing inland from Les Andalouses. They then turned back to the lake shore where about 250 paratroops who had landed in the planes had taken cover from the snipers behind a stone wall. Raff, injured in the jump, set up a command post in a C-47 but had to delegate active command of the battalion to his executive, Maj. W. P. Yarborough. Schofield took command of the troop carriers.

An attempt was made to load the paratroops back on the planes and taxi them across the Sebkra for an attack on Tafaraoui. If successful, this would have enabled the battalion to reach the airfield that day, but it did not work. As the planes moved toward the center of the Sebkra, they began to bog down in the mud. Yarborough, undismayed, ordered his men to march across the Sebkra. They were halted on the south shore for lunch shortly after noon when they heard that an Allied column from Arzeu had taken Tafaraoui. Major Yarborough decided to fly in with three planeloads of troops to garrison the airfield, and he radioed his request back to Schofield about 1300. Beck and two other pilots volunteered for the mission and reached Yarborough about 1600.

A few minutes later they took off for the airfield, but five miles west of it six French fighters attacked, forcing them to land. Lieutenant Beck's plane was hard hit. It was the second time that day that he had been forced down by enemy

fighters, but Major Yarborough reported that he acted with admirable coolness. Two troop carrier men had been killed, one wounded, and one injured. Three paratroops had been killed and 15 wounded. All three of the planes later had to be salvaged, as did that of Captain Evans.

Yarborough took from the three planes all paratroops able to march and pressed on to Tafaraoui afoot. He reached it at dawn on 9 November. The wounded men and the crews of those planes were brought in later by trucks. The main body of the battalion, plodding overland from the Sebkra was also picked up on the 9th, and arrived in Tafaraoui about 1600 aboard trucks and a commandeered bus. It immediately took over the defense of the airfield.<sup>21</sup>

The troop carriers had arrived before the paratroops. About noon on D-day Schofield had heard the news that Tafaraoui was taken and had sent Major Oberdorf to investigate. Oberdorf, who was the first American pilot to land at the field, arrived there at 1250. French batteries on hills commanding the field shelled him as he landed and nicked his plane with shrapnel. One or two other pilots were dispatched to the airfield during the afternoon, but Schofield waited until one of the planes there radioed that resistance had ceased before flying in the nucleus of the 60th. Two pilots volunteered to stop on the way and pick up the troops left on the mudflats beside Evans' plane. By 1700 on D-day the move had been made and 25 C-47's with 2 planeloads of paratroops had arrived on the runways of Tafaraoui. The French 75's on the hills hailed them with a barrage that lasted several minutes, but only minor damage was done. Four Dewoitines preparing to strafe the field were shot down by Spitfires of the 31st Fighter Group (which was flying in to Tafaraoui from Gibraltar) before they could damage the grounded planes. Next morning sporadic shelling continued for a while, but the only damage was inflicted by a bomb which knocked out a C-47 and injured one of its crew. About noon on the 10th Oran capitulated. At that time none of the outlying aircraft had been flown in, and of the 25 troop carrier planes at Tafaraoui only 14 were operational. Of the paratroops only 150 were judged fit for another mission within three days.<sup>22</sup>

Although the Allies had succeeded in taking Oran, the mission of the Paratroop Task Force had contributed little or nothing to that achievement.

This failure of the TORCH airborne mission was commonly explained by the bad navigation of the 60th Troop Carrier Group.<sup>23</sup> The evidence indicates that the group did a good job under unprecedentedly difficult circumstances. After all, it made a 1,100-mile flight, most of it at night, and brought 85 percent of its planes to their destination. Moreover, it had had no rehearsal at all\* and almost no training with airborne troops after the middle of October. It had received 14 of its planes too late for the pilots and crews to familiarize themselves with new equipment or even to test it properly. The pilots and crews of those 14 planes had had to set out with very little sleep and less briefing. Those who did get formal briefing considered it inadequate and misleading. The misunderstanding over the frequency of the beacon on the *Alynbank* was particularly unfortunate. All but 11 navigators had been obliged to use unfamiliar British instruments. Responsibility for these mishaps must rest, not with the paratroop task force, but with higher headquarters, and with the VIII Air Force Service Command.

The bad weather which the force encountered was certainly disastrous. However, the forecast, though misleading, was probably up to the average available at that time. The Allies did not yet have either the information or the techniques needed for accurate forecasts of conditions over the continent. The lack of liaison which caused the agent at Tafaraoui to silence his beacon must be regarded as part of the fortunes of war. The capital error lay in exposing the force to those fortunes at all.

Plan B was bound to miscarry if the French really resisted. A drop by daylight over Tafaraoui or La Senia would have exposed the troop carriers to heavy fire and would have been suicidal for the paratroops. A successful drop or landing might have been made at Oggaz. Such points, near but not on top of a major installation, were approved by airborne theorists and were generally selected in later airborne operations. However, even in such a case, it seems unlikely that the paratroops could have stormed Tafaraoui by daylight. After observing the machine guns massed around Tafaraoui, Colonel Raff, an officer of exceptional boldness, declared that an attack would not have been feasible except under cover of darkness. General Fredendall also favored the night operation

\*Bentley and Yarborough both stress this.

and considered it unfortunate that Plan A had been discarded.<sup>24</sup>

On the other hand, many pilots felt that at night "not one ship of the group would have found the objective."<sup>25</sup> This view was too pessimistic. Analysis of the mission indicates that the seven or eight planes which remained approximately on course and made landfall near Oran might have picked up the beacons and made an accurate drop. The rest, however, would have been committed to a midnight game of blindman's buff over the sea and the Moroccan mountains in which it is unlikely that more than a few lucky individuals would have reached Oran.

If we accept Raff's verdict that the Paratroop Task Force could hardly have succeeded in daylight attack and the pilot's conviction that it could not have reached Oran at night in adequate strength, it is logical to conclude that TORCH airborne mission should not have been flown on D-day. Air Marshal Welsh had been right.

The whole purpose of the mission under Plan B had been to get planes and paratroops to Africa for use farther east. This could have been done best by waiting until it could be done safely. Had the Paratroop Task Force been flown in by daylight after Tafaraoui was in Allied hands, there is every reason to believe that almost the entire force would have been ready by 11 November for a mission against Tunis or Bizerte. Had it waited until the 12th, it could have flown a joint mission with the 64th Troop Carrier Group and the British 3 Parachute Battalion and launched nearly 1,000 troops against the objective.

Since on 12 November the Germans did not yet have any considerable number of troops or planes in Tunisia and the French authorities there were wavering, such a mission might well have fulfilled General Eisenhower's hope for a quick Allied occupation of Tunisia and saved a winter of costly warfare. General Browning reported a widespread belief in Africa that as late as 23 November such a blow could have succeeded. The German marshal, Albert Kesselring, was of the same opinion.<sup>26</sup>

TORCH mission, gallant as it was, was a misuse of airborne forces. It wasted them in a venture bound to be ineffective; instead of conserving them for use at the decisive time and place.

#### Extemporized Missions in the Race for Tunisia

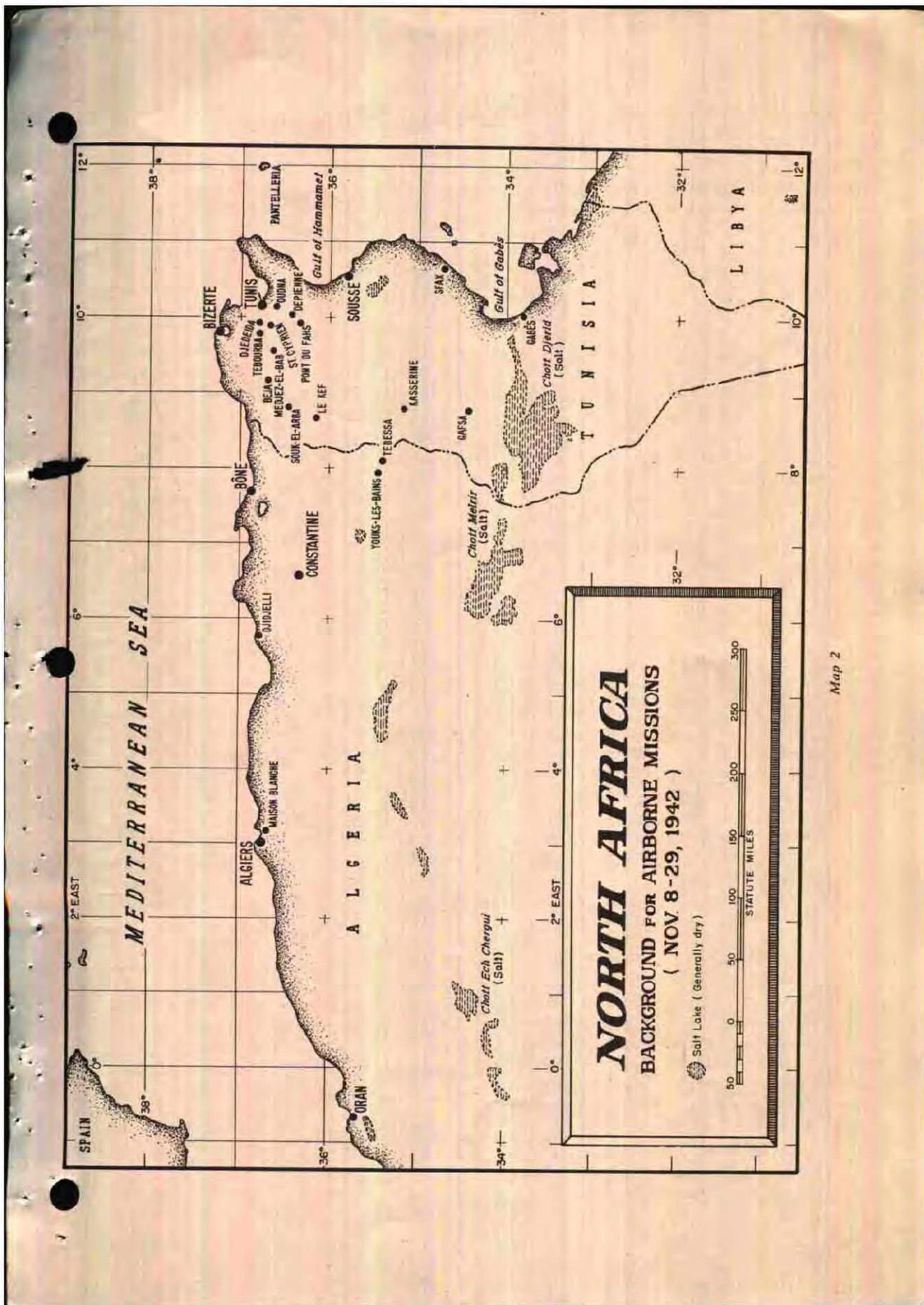
Once the Allies had made good their landings on the African coast, it was obvious that their next task was to outrace the Germans into Tunisia and that in this race only airborne operations offered a chance for success. Consequently, on 10 November General Doolittle ordered the 60th Group to get every available plane to Algiers as soon as possible. All that night and the next morning the crews worked on their aircraft. They had very few tools and had to filter the French gasoline through chamois to fuel their planes.

On the afternoon of 11 November, 13 C-47's took off with 134 paratroops for Maison Blanche, the French airfield outside Algiers. Next morning a dozen more followed with about 170 troops.\* At Maison Blanche they were reinforced by the plane and personnel that during TORCH mission had had to land at Gibraltar. Thence they had flown to Algiers with the 64th Group early on the 11th. Existence at Maison Blanche was very hard for the troop carrier men, who had to leave all but essential equipment in England. They slept unsheltered in the mud, and, having neither food nor cooking utensils, ate out of British gas cans such rations as the British felt able to spare.<sup>27</sup>

On 13 November Colonel Raff and Maj. Martin E. Wanamaker, the ranking officer of the 60th Group at Maison Blanche, were called in to Algiers and told that they were to take the town and airfield of Tebessa.<sup>28</sup> Tebessa was a crossroads town close to the Tunisian border about a hundred miles south of the Mediterranean. Through it passed the principal routes into central Tunisia. Lt. Gen. Kenneth A. N. Anderson, commander of the British First Army, which was in charge of the Allied advance into Tunisia, had called for the drop, and Raff and his men were attached to that army during the operation.

Never had an airborne mission been ordered and launched with less information to guide it. Some maps given to the pilots and paratroops were on a scale of 1:50,000, but there was only one detailed map of Tebessa. No aerial photographs were available, and no weather reports. The Germans had been reported within a few miles of Tebessa, but no one knew whether they had taken

\* Estimates of the troops flown to Algiers on the 12th range from 124 to 170, but since all sources agree that over 300 paratroops participated in the mission to Youks-les-Bains the latter figure seems approximately correct.



Map 2

it, or whether, assuming the French still held it, they would resist the Allies. The Tunisian authorities were still adhering to the Vichy government and were allowing the Germans to pour reinforcements into their territory unmolested.

The general ignorance regarding the objective seems to have given Wanamaker a free hand in selecting the route and Raff in selecting the drop zone. According to Raff, he chose the drop zone as a result of meeting "by the merest fluke" two pro-allied Frenchmen on the airfield at Maison Blanche. On being questioned about Tebessa, they told him of a large French bomber field near Youks-les-Bains, a village 10 miles west of Tebessa. Considering this a greater prize, a better drop zone and, perhaps, more remote from German interference, Raff decided to drop his men on the Youks airfield.\*

All day on the 14th and far into the night the troop carrier men and paratroops prepared for the mission. The task was complicated by the fact that the C-47 fuel tanks had to be filled by hand from British four-gallon containers and that, because the 60th had not carried paratracks on its trip to Africa, paratroop equipment and supplies had to be stowed in wicker panniers provided by the British.

At 0730 on 15 November, 20 planes loaded with over 300 paratroops of the 503d took off from Maison Blanche. Colonel Raff flew in the lead plane with Major Wanamaker as pilot. Six British Spitfires escorted them from the start. The weather was so bad that much of the time they had to fly on instruments. To avoid the cloud-covered mountains, Major Wanamaker led the formation over the Mediterranean as far as Djidjelli, where they picked up an additional escort of six Hurricanes. They then flew inland on a southeast course past the town of Constantine, a distinctive landmark. Although, according to Raff, all they had to guide them was a sketch made on a French air map by one of their two mysterious informants, they had only momentary difficulty in finding Youks after a 300-mile flight. At 0945 they dropped their paratroops on the airfield from a height of between 350 and 400 feet in record time. Two enemy planes had been sighted on the flight, but they made no

effort to attack the well-escorted force. Except for one aircraft which landed at Djidjelli with engine trouble, all returned safely and uneventfully shortly after 1200. Major Wanamaker quotes Raff as saying "The Youks jump was the most successful jump I have ever made. The landing pattern over the target was perfect and well timed."<sup>29</sup> The paratroops agreed that the jump was a good one, but it was terrifying nevertheless. As they drifted down, the troops could see beneath them entrenchments filled with armed men. These were the crack 3d Zouaves, well supplied with machine guns and mortars and supported by 75-mm. guns. Fortunately, their commander was friendly, and Raff and his men received a cordial welcome.

Fifteen men had been injured, a small number considering the low altitude of the drop. Raff sent about two-thirds of the rest ahead to buttress the defense of Tebessa, but before the day was out, his eye was on a more spectacular objective. Having learned from the French that central Tunisia was a no-man's-land, he telephoned General Clark for permission to advance to Gabes on the east coast of Tunisia and cut off the Germans around Tunis from Rommel's retreating forces. Clark judiciously limited him to Gafsa, 75 miles beyond Tebessa.†

Even there Raff was later hard pressed. However, the bold action which he initiated in that area with a handful of men kept the Germans on the far side of the Tunisian Dorsal until February and gave the Allies plenty of room on their right flank. Youks, for its part, proved highly valuable as a forward airfield for operations against all parts of Tunisia. Such were the fruits of the drop at Youks-les-Bains.

Meanwhile, the 64th Troop Carrier Group had reached Africa from England via Gibraltar and had embarked on a series of notable missions. After flying through a barrage by nervous Allied antiaircraft gunners along the Algiers waterfront, the group had landed at Maison Blanche at dawn on 11 November with 34 planes carrying the British 3 Parachute Battalion minus 1 company.

No sooner had they landed than General Anderson and Air Commodore G. G. Dawson of Allied

\*Major Wanamaker's report indicates that the two Frenchmen were provided not by chance but by Allied Intelligence, and he at least implies that Raff did not act independently in selecting Youks. However, his report, written four months after the event, fails to give a clear picture of how the planning was done.

†Anderson did consider dropping a battalion of paratroops on 23 November at Soussse, a port only 75 miles south of Tunis. If successful, this would have led to encirclement of the Axis troops in the Bizerte-Tunis area. The mission reached the briefing stage but was first postponed, then cancelled. (Hist Air Ech 64th TC Gp, 6-25 Nov. 42; Browning, Report on Visit to North Africa, 7 Jan. 43.)

Force Headquarters called on them to fly a paratroop mission to Bône that night. Bône was 275 miles east of Algiers. By far the best port in eastern Algeria, it was the logical point at which to land for a push into Tunisia.

The 64th Group was not qualified for a paratroop drop at night. Besides, its men needed rest and its planes needed servicing. The mission was therefore reluctantly postponed to the morning of the 12th. Briefing, begun at 2000, was interrupted by a German bombing raid. Work on the planes continued long after midnight.

At 0600 on 12 November, 26 planes of the 64th loaded with British paratroops set out for Bône. A dozen Spitfires accompanied them as escort. The group flew along the coast in column or, as the British put it, "in line astern," a formation favored by the group commander. About 0830 they dropped 312 troops on and around Bône airfield. The drop in column dispersed the paratroops over an area three miles long. The French received them peacefully, if not with enthusiasm, and Bône was won for the Allies. The troop carriers and their escort all returned safely about 1030.<sup>30</sup>

The rest of the British 1 Parachute Brigade arrived at Algiers by water on 13 November. Within 24 hours of their arrival, First Army had a mission for them. This was to take Souk-el-Arba, a town about 60 miles southeast of Bône. It was the site of a good airfield and a major junction on the main highway to Tunis. There was as little information available about Souk-el-Arba as there had been about Tebessa. No photographs of the area were to be had, and only one auto map on a scale of 1:250,000. Because of the lack of photographs the drop zone had to be selected during flight by the paratroop commander, riding in the lead plane. The political situation was obscure.

The mission set out at 0700 on the 15th but was turned back near Bône by bad weather. At 1100 on the 16th, 32 planes of the 64th Group took off for Souk-el-Arba from Maison Blanche. Again they were escorted by a dozen fighters, and again they flew in line astern. They found their way successfully to Souk-el-Arba and dropped 384 British paratroops on and near the airfield. All planes returned safely about 1600.

As at Youks, the French welcomed the paratroops as allies and liberators. In both cases the drops seem to have given the French the confidence they needed to turn against the Axis. How-

ever, the paratroops did not stop for celebrations. They commandeered some busses, climbed in and drove ahead for 40 miles to Beja, another important junction on the road to Tunis. This they held until First Army caught up with them, harassing the Germans in the meantime by pushing patrols almost to the outskirts of Tunis itself.<sup>31</sup>

By 28 November the hard-driving Allied columns were on the outskirts of Djedeida, less than 25 miles from Tunis, and it seemed to their commanders that with one more effort they could break through and take the city. In conjunction with this final push First Army called for a most ill-fated airborne mission. Setting out from Maison Blanche the troop carriers were to drop paratroops behind the German lines. These troops were supposed to attack and neutralize sundry airfields close to Tunis and spread alarm and despondency among the Axis forces. Assuming that those forces were already deployed to meet the First Army offensive, the raiders would be unlikely to encounter serious opposition.

Accordingly, the British 2 Parachute Battalion was ordered to jump the following day on Pont-du-Fahs airfield, destroy enemy aircraft and supplies there, and march on to repeat the work of destruction at the bases of Depienne and Oudna. Then the troops were to push west to St. Cyprien to meet the advancing forces of First Army. It should be noted that Oudna is about 10 miles south of Tunis, Depienne is 15 miles southwest of Oudna, and Pont-du-Fahs lies 10 miles southwest of Depienne.

Briefing was done on the morning of the 29th. A late intelligence report that Pont-du-Fahs and Depienne had been evacuated led to a last-minute change of plan. No drop would be made at Pont-du-Fahs. The battalion would jump at Depienne and attack the field at Oudna.

Rain and mud, a congested airfield and certain changes in order of flight produced a slow take-off lasting from 1130 to 1230. Finally the formation was in the air, 26 planes of the 62d Group (which had reached North Africa on 15 November) and 18 of the 64th Group carrying 530 paratroops. The lead aircraft was piloted by Col. Paul L. Williams, the commander of the 51st Troop Carrier Wing. He, too, had flown in from England on the 15th. With him rode the paratroop commander, Lt. Col. John D. Frost. Their initial escort of 4 Hurricanes and 8 P-38's was supple-

mented at Le Kef by an additional 14 Spitfires. In Africa at that time this was an unusual concentration of fighters.

Aided by a strong tail wind, the force reached its objective on schedule, apparently without opposition by enemy planes or guns. The route, some 400 miles in length, was simple enough as long as it followed the Algerian coast. Although this route became more difficult to follow after it turned inland over the Tunisian hills, Colonel Williams, nevertheless, picked his landmarks precisely and dropped his troops over Depienne airfield at 1450 from a height of 600 feet.

The formation had been loose and ragged, presumably because of the inexperience of the pilots, especially those of the 62d Group. The dispersed formation caused dispersion in the drop. Troops and supplies were scattered over an area one and a half miles long and half a mile wide. Some men, who had evidently landed much farther away, were still missing seven hours later. Only a few paratroops were injured in the drop, and all planes returned safely.

The battalion assembled and reconnoitered Depienne. It found that the Germans had indeed withdrawn. At 2200 Frost and his men set out over the hills to Oudna. With only a few requisitioned mule carts for transportation, the going was slow and hard. They took Oudna next day after a brief skirmish, only to find that that field, too, had been evacuated by the Germans. Less than an hour later the paratroops were attacked by Messerschmitts and heavy tanks, and were pinned down until nightfall on the field they had won. They pulled back a mile or two in the darkness but, instead of retreating, bivouacked until dawn awaiting orders for some further attack on the Germans. They still hoped to play a part in the Allied offensive. Instead, about daybreak, they learned by radio that the Allies had been defeated. Repulsed outside Tebourba, First Army had fallen back on Medjez-el-Bab, 40 miles west of Oudna.

Frost faced the alternatives of retreat or surrender. His battalion, on foot, and with only a couple of antitank rifles for artillery, was surrounded by an enemy armed with tanks, planes, and big guns. The paratroops would have to outfight and outrun the panzers for 40 miles to escape. They chose to run the gauntlet.

About noon on 3 December Frost and 180

of his men staggered up to an American tank near Medjez-el-Bab. In four days they had fought off the Germans in four pitched battles. In four nights they had marched more than 60 miles over trails and mule-tracks in the hills. Other paratroops straggled in later, but of those who had jumped at Depienne half were dead or in captivity. That was the cost of their mission, an exploit as heroic and as futile as the charge of the Light Brigade.<sup>32</sup>

The disastrous drop at Depienne was the last major airborne mission flown in North Africa.<sup>33</sup> The principal reason for this was that for the next four months the Allies were on the defensive and lacked suitable objectives for such a mission. When General Fredendall planned an offensive in January, he provided for a drop by Raff's battalion to take a bridge near Maknassy. Since the offensive never came off, the mission was scratched. However, the plan shows that the Allies were still eager to resort to airborne tactics if opportunity offered. Other conditions which discouraged further airborne operations were the stormy Tunisian winter and the lack of decisive air superiority at the front until March. By spring it was clear that the Allies could win in Tunisia without airborne assistance and that all the troop carriers and paratroops in the theater would soon be needed for the invasion of Sicily. As a result no more missions were flown.

Neither the airborne troops nor the 51st Wing were idle during the winter. Both British and American paratroops were used for long periods as infantry. Manpower was limited, and in the rough Tunisian hills, difficult for tanks and big guns, the lightly armed paratroops fought well.

Meanwhile, the troop carriers of the 51st Wing were busy as transports and couriers. The great demand from air and ground forces alike for air movement of men and supplies, caused by the immense distances and limited communications of Africa, had not been anticipated. The 51st Wing had all the work it could handle. It would have been indefensible to keep the wing in reserve for

<sup>32</sup>A minor mission was flown on the night of 25 December. Three planes from Thelepte carried 30 paratroops and 500 pounds of TNT to blow up a bridge north of El Djem. They flew "on the deck" under a full moon using a V formation with the wingmen below the leader, so that they could see his silhouette against the sky. At Raff's suggestion Maj. Philip Cochrane, who had just made a fighter reconnaissance of the area, flew as co-pilot of the lead plane. The drop was good, but after landing the paratroops headed away from the bridge instead of toward it, and before they could turn back, the enemy was alerted. Little was accomplished and most of the troops were captured. (Hist 60th TG Gp, 1942; Raff, *We Jumped to Fight*, p. 183.)

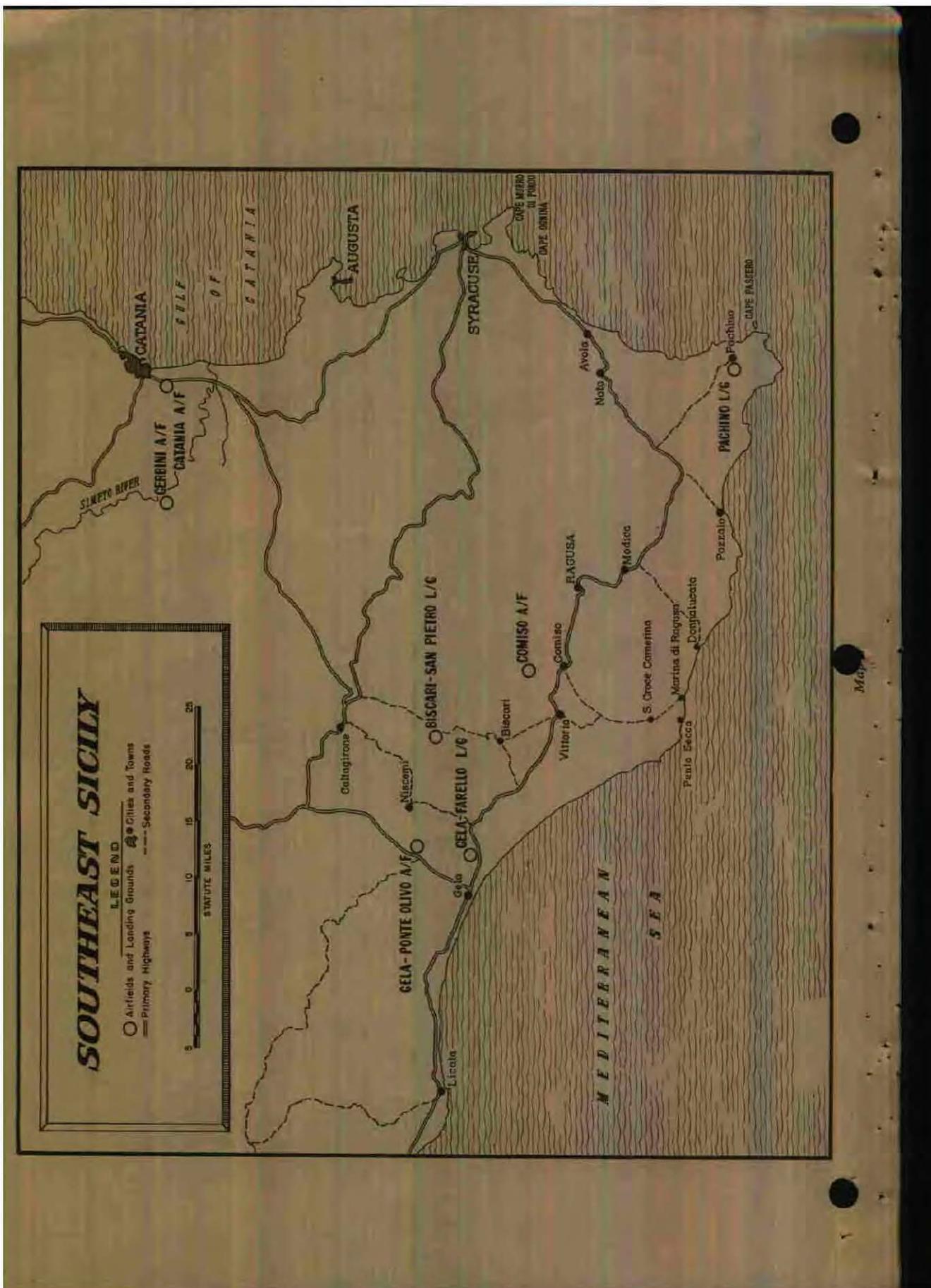
contingencies when it was so badly needed. It was, however, unfortunate that during the winter it was given little or no opportunity to train for its primary function. If the ravenous appetite for air transport had been withstood sufficiently to keep a couple of squadrons at a time in training, a better showing might have been made in Sicily.

The four post-TORCH paratroop missions had demonstrated that by daylight the troop carriers could find their way on a minimum of information to inconspicuous objectives 300 or 400 miles away. They had also proved the value of airborne operations in quickly winning strategic areas unoccupied or lightly held by the enemy.\* The para-

troops had shown their magnificent fighting qualities, but also their great weaknesses—lack of ground mobility and firepower. Whether the Allies could conduct airborne operations in sufficient strength to hold a strategic point against the assault of a German division remained to be seen but they had gained in North Africa the experience and confidence needed to attempt such operations in the Sicilian campaign.

\*"There can be no doubt that the short-range parachute operations which have been carried out were invaluable and that precious days were saved by the bold use made of them." (Report On:—Impressions Gained From the Assault Phase of the Operation in North Africa by Maj Gen J. C. Haydon in AFSHO 2036.)





## The Sicilian Missions

### Planning for HUSKY

IN DECEMBER 1942, just as the Allied advance was bogging down in the muddy hills of Tunisia, Allied planners drew up a study on the invasion of Sicily. This was only one of many projects then under consideration. The Americans were eager for an invasion of France, while an attack on Sardinia had considerable British support. However, in January 1943 at the Casablanca conference, President Roosevelt, Prime Minister Churchill, and the Combined Chiefs of Staff selected Sicily as the next Allied objective.

Swift action was taken to set up machinery for the operation which was henceforth called HUSKY. Gen. Harold L. Alexander, a veteran of many British campaigns, was designated by Eisenhower as deputy commander in charge of all Allied ground forces. Under Alexander a small headquarters, known as Force 141, was set up at Algiers to plan the invasion. The air staff of Force 141 was headed by Air Cdre. R. M. Foster of the RAF.

On 2 February Allied Force Headquarters (AFHQ) issued a preliminary directive on HUSKY. On 3 February planning sessions began, and on 12 February Force 141 issued its first estimate of the situation.<sup>1</sup>

Only brief attention need be given to the early plans for the assault, since they were later revised beyond recognition. Indeed, they had always been regarded as provisional on the assumption that final decisions would be made at the end of the Tunisian campaign when the commanders, involved were no longer preoccupied with current operations. Then, too, sufficient staff personnel would be available to work out the details of the

enterprise. Up to 26 April the task forces had not participated in any planning of air operations.<sup>2</sup>

The plans as they stood on that date called for assaults by the British Eighth Army (Force 545) under General Bernard L. Montgomery at Gela, Pozzallo, Pachino and Avola in the southeast corner of Sicily. Two days later American troops (Force 343), later the Seventh Army, under command of Maj. Gen. George S. Patton would strike at the western end of Sicily between Sciacca and Castelvetro. The British were to drive north against Syracuse, and the Americans, reinforced by a subsequent landing near Castellamare, would advance to take Palermo. Early control of these great ports was deemed essential.

Paratroops were to be used in both the British and American operations to neutralize beach defenses before the main assaults and thus prevent the Germans from pinning down the invaders before they could get a foothold. So important was the action considered that it determined the selection of D-day for HUSKY. The paratroops needed a dim light in which to make their drop and some hours in which to liquidate opposition on the beaches. These conditions were to be expected on the night of 9/10 July when a quarter moon set half an hour after midnight. That night as the moon set three brigades of paratroops would jump behind beaches in the British sector. The initial American assault would be preceded by the dropping of a parachute combat team, probably on the night of D plus 1/D plus 2. Lack of enough troop carrier units to fly both the British and the American airborne missions simultaneously was the main reason why the American assault had been set back to D plus 2. A third mis-

sion to support the Castellamare assault was tentatively planned for D plus 5.<sup>3</sup>

Early in May the plans for HUSKY were radically changed. General Montgomery, whose forces were then regrouping before Enfidaville, had paid a visit to Cairo on 23 April and for the first time turned his full attention to the plans for HUSKY. He had never been satisfied with them. Now on closer inspection he made up his mind that they were "fundamentally unsound." With Allied task forces at opposite ends of Sicily, the Axis might mass its strength against each in turn and destroy them separately. Moreover, he thought the forces planned for his assault on eastern Sicily would be spread much too thin. He proposed to Alexander that in order to concentrate his effort, he should be allowed to cancel the Gela landing. Alexander agreed, but Air Marshal Arthur Tedder did not. He held that the Gela assault was the only way to secure indispensable air bases at Ponte Olivo and Comiso. On 2 May, Eisenhower held a conference at Algiers to settle the dispute. There Montgomery presented his views on the need for concentration and won a sweeping change of plan.<sup>4</sup>

On 3 May the American force was given a new mission, the invasion of the south coast of Sicily from just beyond Pozzallo, which remained in the British sector, to the little port of Licata. Ten days later the CCS approved the new plan. Under the new directive the Americans devised a three-pronged assault. The 3d Division would land at Licata, the 1st at Gela, and the 45th at Scoglitti. The two latter divisions were under II Corps, commanded by Maj. Gen. Omar N. Bradley. In the British assault plan 2½ divisions were to be concentrated in the Pachino area; one would land at Avola; and another would land near Cassibile, 7 miles south of Syracuse.

At first the idea of using paratroops against the beach defenses was retained, but again Montgomery called for a change. He had believed earlier that the capture of Syracuse was vital. He regarded it as indispensable, now that Palermo was out of close striking range. He therefore requested that airborne operations in his sector be directed, not against the beaches, but against Syracuse.<sup>5</sup>

By that time the Americans, too, were losing their enthusiasm for a paratroop drop immediately behind the invasion beaches. Since 16 April, Brig. Gen. Maxwell D. Taylor of the 82d Division had sent a series of letters to Patton's headquarters

pointing out that a mission against beach defenses was unsuitable for paratroops: being lightly armed, they could neutralize only a limited area; their presence would reveal the exact location of the impending landing; and they themselves would be exposed to the naval bombardment of the beaches. A mission some miles inland attacking local reserves and securing key terrain was recommended as much more appropriate.<sup>6</sup>

These suggestions met a sympathetic hearing at Patton's Force 343, which had begun to feel that the need to delay an enemy counter-offensive after the landing was greater than the need to clear a way for the landing itself. By 17 May the old plan had been discarded. Next day Force 343 issued a new plan according to which a reinforced parachute combat team of the 82d Division was to be dropped well inland northeast of the port of Gela to block the movement of enemy reserves toward the American beachhead. General Bradley of II Corps was consulted at the time of this change and expressed his concurrence. This was II Corps' only participation in the airborne planning.<sup>7</sup>

On one important point Taylor's advice was not followed. On 11 May, while the plan for a drop over the beaches still held, a decision had been taken to make the drop at moonset, 0030 on 10 July. Taylor had argued for a drop at dawn on the ground that in darkness about 15 percent of the troop carriers would fail to find their objective, and that the paratroops would have difficulty in assembling. The new objectives of the paratroops could be achieved at least as well by a dawn drop as by one at night, but no change was made in the timing of the operation.<sup>8</sup>

Force 141 approved the plans of its task force commanders and gave them free rein. On 21 May it allotted the British 1 Airborne Division to Montgomery and the American 82d Airborne Division to Patton to use as they pleased on the night of D minus 1. Two days later Montgomery published a plan providing that "Airborne forces composed of paratroops and possibly gliders will be dropped to the North East (*sic*) of Syracuse shortly before 'H' hour on 'D' day."<sup>9</sup>

About the beginning of May arrangements had been made to ship 500 gliders from the United States for use in HUSKY. As long as the airborne mission called for commando tactics against beach defenses, the gliders had been destined for

follow-up operations or transport of key air personnel to Sicily.<sup>10</sup> Now that the British airborne forces were to fight it out with enemy troops on the approaches to Syracuse, the firepower and concentration possible in a glider landing came to seem of paramount value. Thus about the last week in May, Montgomery's parachute mission turned into a midnight glider assault. The decision to use gliders is said to have been made by Montgomery himself. In vain did the British Airborne Forces adviser, Group Capt. T. B. Cooper, RAF, protest that a glider assault on a dark night with inexperienced crews was not practicable. The decision stood.<sup>11</sup>

Once the task force commanders and Force 141 had decided on the missions, it became the responsibility of the troop carrier and airborne commanders to see that those plans were implemented. How the details of loading, schedule, formation, and drop zone were settled is obscure, but it appears to have been accomplished mainly by conferences between airborne and troop carrier representatives under the supervision and sometimes with the participation of Force 141.

Coordination of planning with other commands and services was handled through Force 141 with the assistance of Maj. Gen. F. A. M. Browning, who had been chosen in March to be airborne adviser to Eisenhower. Browning had been the organizer and first commander of the British 1 Airborne Division and was a persuasive and enthusiastic exponent of airborne warfare not without influence on the planning for HUSKY. However, he had no command functions, and his office at Force 141 was more than 200 miles from the troop carrier headquarters and training bases. This was merely one example of the dispersion of the Allied forces. Headquarters were scattered from Morocco to Egypt, a fact which made the coordination of planning abnormally difficult.<sup>12</sup>

One matter which had to be decided before training started was which of the airborne and troop carrier units would be teamed together for HUSKY. Besides the 51st Wing and the battalion of the 503d, which were already in North Africa, the United States had promised to send the 52d Troop Carrier Wing and the 82d Airborne Division. In addition the Ninth Air Force agreed in April to lend three squadrons of the 316th Troop

Carrier Group.\* The British had agreed to provide a squadron of 30 Albemarle and a flight of 10 Halifaxes from their troop carrier organization, 38 Wing, RAF, and to send the balance of 1 Airborne Division to join the parachute brigade already on hand. The four-engined Halifaxes were needed to tow the large British Horsa gliders, 36 of which the Air Ministry had promised for June delivery.<sup>13</sup>

At first the 51st Wing was designated to work with the American airborne, and the 52d Wing was to fly the British. However, on 6 May, just after its arrival in Africa, the 52d Wing was informed that the roles had been reversed. It would carry American troops and the 51st would be teamed with the British.

Since the 51st Wing had had operational experience with the British, and since the 52d Wing had flown the 82d Division for three months of joint-training and maneuvers before leaving America, the new line-up seemed logical. It lost its logic at the end of May when Montgomery decided on a glider mission. The 51st Wing, which would have to fly it, was almost completely without glider experience. The 52d Wing had been trained in glider operations in the United States, but was committed to a paratroop mission. By then it was too late to change again. The planes of the 51st Wing had been modified for use by British paratroops, and there were neither time nor materials to modify those of the 52d. Moreover, since the techniques of dropping American and British paratroops differed, a switch in the middle of the training period would have caused dangerous confusion.<sup>14</sup>

On 24 May the 82d Division and the troop carriers had agreed on the three main drop zones which they were to use in the Gela mission and on the four battalions of paratroops who were to make the drop. Minor changes were later made in the support troops to be sent on the mission and provision was made for a demolition detachment to drop near a bridge over the Acate River southeast of the main drop area. In June discovery of pillboxes in the drop area forced the paratroops to make minor changes in their plans, but did not much affect the troop carriers.<sup>15</sup>

\*Even so, HUSKY would require "every available transport aircraft" in North Africa, leaving none for air supply. Therefore, early in May it was agreed that about 1 June two squadrons of the 315th Troop Carrier Group would be dispatched from England to North Africa to provide essential air transport service and provide a reserve for contingencies.

On 30 May the Northwest African Air Force Troop Carrier Command\* announced the line-up of its forces for HUSKY: this was followed almost exactly on D-day. On the night before D-day the 52d Wing was to dispatch 227 C-47's to drop American paratroops of the 82d Division in the Gela area. The wing was to be reinforced by the loan of the 64th Troop Carrier Group from the 51st Wing and the 316th Troop Carrier Group from the Ninth Air Force, giving it a total of 250 aircraft for the operation. Its mission was at first called HUSKY mission and later HUSKY 1. On that same night 100 C-47's from the 51st Wing would tow Waco gliders to a point southwest of Syracuse to carry out the glider assault conceived by Montgomery. In addition 38 Wing would send out 25 Albemarle towing Wacos and 8 Halifaxes towing English Horsa gliders. All gliders were to be manned by British glider crews and airborne troops. This mission was later named LAD-BROKE.

Provision had been made for two airborne missions after D-day to deliver British troops on order from 13 Corps to take bridges near Augusta and Catania. To make sure that there would be enough aircraft for the Catania mission, which was tentatively scheduled for the night of D plus 3, Browning and Air Marshal Tedder, the Mediterranean air commander, had agreed that the 64th Troop Carrier Group should be returned to the 51st Wing in time for the operation. No mention was made of airborne operations after D-day in the American zone. Apparently none had yet been planned.<sup>16</sup>

The Kairouan area in Tunisia had been selected before the end of April as the most suitable area for staging the airborne missions, but the precise location of the troop carrier and airborne units was not settled until after 21 May. By 3 June, 18 airfields in the general vicinity of Kairouan had been assigned to Troop Carrier Command, which in turn assigned to the 51st Wing 6 bases south of Sousse near Goubatine and El Djem, selected as being logistically convenient for the British airborne. It gave the other 12 fields to the 52d Wing, which used 9 of them for operations, the rest to store gliders. Eight of the 9 operational airfields were close to Kairouan, the other was about 30 miles to the north near Enfidaville. Except at Enfidaville, a good base begun by the

Germans and completed by the Allies, the airfields were mere dirt strips, 6,000 feet long and 300 feet wide, newly constructed by Allied engineers. Six bases had two such strips, the rest one each. To avoid congestion and simplify flight control, all fields were sited at least five miles apart.<sup>17</sup>

Routing was a matter more difficult to settle. Since air, ground and naval forces were all autonomous under the Allied commander in chief, it required coordination on high levels with both ground and navy.<sup>18</sup>

The ground forces accepted the view that:

The onus of not shooting down friendly aircraft rests with the ground troops. *It can be avoided by thorough schooling in recognition and indoctrination of the principle that troops must identify aircraft as hostile before opening fire.*<sup>19</sup>

The troop carriers had only to pick their route. Ground would give them safe-conduct. Whether green troops in the dark of night and the excitement of their first battle would remember the safe-conduct no one could tell. However, of the missions originally scheduled none crossed Allied positions.

All missions did have to cross the sea to get to Sicily, and the sea belonged to the Allied navies. Their formula was simple. Let aircraft avoid all Allied shipping, and let convoys treat all aircraft in sight as hostile. They put no faith in recognition, and, indeed, throughout the Sicilian operation, naval gunners were inclined to fire on anything that flew near them.

Certain specific rules were laid down at a conference held in Tripoli on 4 June. One point on which the naval commanders had their way was that multi-engined aircraft should not fly within five miles of any convoy unless it was unavoidable. In that case, they should give full advance warning and fly at an altitude of over 6,000 feet. If these provisos were not met, ships were to be free to fire "in all circumstances" on multi-engined aircraft flying within a radius of 12,000 yards of cruisers or battleships, 5,000 yards of other warships and 1,500 yards of small escort craft and merchant vessels, except that when lying off the invasion beaches merchantmen should wait until warships opened fire.<sup>20</sup> By day this limitation might be effective. By night unauthorized fire by any ship was likely to be mistaken for a signal for all to fire.

The naval representatives would have liked

\*See below, p. 26.

to have Troop Carrier formations fly over water at a height of at least 6,000 feet. Since the big formations in an airborne mission would at that height have shown up on enemy radar like a herd of elephants on a hilltop, Troop Carrier Command secured the right to fly its missions at low altitudes. Its routes, however, were chosen with meticulous care to avoid the convoys.

By 4 June, Force 141 had decided that LADBROKE, the mission against the Syracuse area, would proceed from Tunisia by way of Malta and Cape Passero, the southeastern tip of Sicily. A route via Pantelleria was proposed for the HUSKY mission to Gela, subject to naval approval, which was given that same day at Tripoli. The planes on the mission would clear the convoys. So would those in LADBROKE and its prospective successors, provided that they kept on schedule, flew 60 miles on a southeast course after leaving Sicily, and took care to swing 10 miles south of Malta on their way back. Later in June, naval representatives agreed that planes returning from LADBROKE could proceed due south to a point off Cape Passero instead of detouring to the southeast. LADBROKE thus received a route which was about as good as circumstances permitted.<sup>21</sup>

Meanwhile, the route of HUSKY mission was being altered for the worse. By 20 June the relatively short and straight route by way of Pantelleria had been discarded, and it was agreed that HUSKY mission, like LADBROKE, would go by way of Malta. From Malta it would head for Cape Correnti, just east of the American zone of operations, turn offshore to follow the coast almost to Gela, then cut inland to the drop area. This route involved three very sharp turns over water in dim moonlight. Requests by airmen for at least some straightening of the course beyond Malta were made, but without success. On 22 June a conference of all commanders concerned agreed to the routes and schedules for LADBROKE and HUSKY mission in approximately their final form.<sup>22</sup>

On 6 July Col. H. L. Clark, commander of the 52d Wing, represented the troop carriers in a conference at Malta with General Browning, Maj. Gen. J. M. Swing, then American airborne adviser to Eisenhower, and Vice Adm. H. K. Hewitt, the naval commander of the American Western Task Force. The conference completed coordination of troop carrier routes, schedules and recognition

signals for the missions on the night before D-day. No changes were made in LADBROKE. The principal change in HUSKY mission appears to have been the substitution of Cape Passero for Cape Correnti as the point off which the troop carriers would turn west along the coast.<sup>23</sup>

Of the course thus laid out for the 52d Wing, the commander of the 61st Troop Carrier Group wrote after the mission "I do not believe it feasible to even try to fly again such a course as was laid down in Husky No. 1 and No. 2." The verdict delivered some years later by Maj. Gen. Matthew B. Ridgway, commander of the 82d Division was that no American outfit in the whole course of the war could have flown that route successfully.<sup>24</sup>

Meanwhile, consideration was being given to the protection of the missions against enemy interference. As early as 23 May, Montgomery's headquarters had contemplated bombing Syracuse and dropping dummy paratroops at Catania to divert enemy attention from LADBROKE. Similar tactics were also to be used in the later British airborne operations. The results of the planning for diversionary operations in aid of LADBROKE were embodied in a NAAF (Northwest African Air Forces) directive of 5 July. A simulated airborne and amphibious assault on Catania would begin at 2200 on D minus 1 with the drop of 3 groups of 80 dummy paratroops each northwest of Catania by bombers of Northwest African Tactical Air Force (NATAF). This would be followed by the drop of 2 groups of 40 dummies each west of Augusta. If feasible, the bombers would then bomb Catania, an enterprise to which the Ninth Air Force also contributed bombers. Between 0215 and 0245 on D-day, 50 medium bombers were to strike at Syracuse with incendiary and other bombs to impede and confuse enemy efforts to counterattack the gliderborne troops.<sup>25</sup>

Similar preparations had been made for HUSKY mission. On 27 May, General Ridgway with the hearty concurrence of the troop carrier commander, Brig. Gen. Paul L. Williams, had asked for night fighter support to neutralize enemy searchlights along the path of the mission. NATAF turned down the project as "impracticable." In June the request was repeated and enlarged to include attacks on Niscredi, a road junction immediately north of the drop area, and enemy fortifications recently discovered in the drop area itself. Williams also appealed to Force 141

for fighter escort and for diversionary fighter and bomber sweeps.\* Negotiations lasted into July.

By 5 July it had been arranged that about 50 bombers of Ninth Air Force would carry out a bombing of Ponte Olivo and Comiso airfields, before 2100 hours on D minus 1. At 2315 bombers from NATAF would drop 2 groups of 80 dummy paratroops each about 8 miles northwest of Gela and 2 other groups of 80 north of Niscemi. These same planes were to bomb Niscemi in order to check the movement of enemy reserves through that junction into the drop area. The strongpoint discovered in the drop area would be bombed before D-day, but not on the night of the mission lest the enemy be alerted. To aid in achieving tactical surprise, enemy radar stations were to be bombed before D-day and obstructed during the approach of the airborne missions by B-17's equipped with jamming devices.

Fighter protection during the departure of the missions from Tunisia and over the vicinity of Malta was to be provided by Air Defense Wing, RAF. The British on Malta also pledged a flight of Hurricanes on the night of D minus 1 to attack enemy searchlights in the Gela area. However, no fighter escort would accompany the troop carriers over Sicily.<sup>28</sup>

#### Training and the Glider Crisis

The Northwest African Air Force Troop Carrier Command (NAAFTCC) (Provisional) was created on 21 March 1943 to handle the increased troop carrier responsibilities during the preparation and execution of HUSKY. Its first commander, Col. Ray A. Dunn, directed on 7 April that 2 of his 3 troop carrier groups be put on training status. The groups had been relied on for air transport service to supplement the inadequate roads and railroads of North Africa, and efforts were made to keep them on the job. NAAF, however, upheld Dunn's decision on 13 April, and training on a limited scale was begun.<sup>27</sup>

On 18 May Brig. Gen. Paul L. Williams took command of NAAFTCC, and Dunn became commanding officer of the 51st Wing. General Williams had left the troop carriers during the winter to spend four hectic months as head of XII Air Support Command. His lack of contact with recent

troop carrier experiments in airborne pathfinder tactics and in the use of navigational aids on missions may partly explain why those new developments were neglected during the preparations for HUSKY.

Joint training of airborne and troop carrier units had begun early in May with the movement of two groups of the 51st Wing to the Mascara area, 50 miles southeast of Oran, to train with 1 Airborne Division. The 60th Troop Carrier Group was stationed at Thiersville, the 62d at Matmore. On 13 May wing headquarters was set up at Mascara. Between 8 and 28 May the 60th and 62d worked at cross-country navigation, close-formation flying both by day and night, and the dropping of paratroops.† This culminated on the night of 28 May in the drop of a brigade by 87 planes drawn from both groups. The pilots flew in two-ship elements at 30-second intervals. Realistic use of searchlights and simulated antiaircraft fire disconcerted many pilots and the drop was by no means accurate.<sup>28</sup>

Next day the 51st Wing plunged into three weeks of intensive glider-towing, training made urgent by the transformation of LADBROKE into a glider operation. Until then too few gliders had been available to permit any considerable amount of glider training, although the glider pilots were on hand and in need of it. American glider pilots had arrived early in March, and 105 of them had been concentrated at Relizane. The British glider pilot regiment of 1 Airlanding Brigade had been at Fröha for weeks. The British were very short of training. A War Office memorandum in March had estimated that they would need a hundred hours apiece of flying time before being fit for an operation. They were totally ignorant of the American gliders, which had very different landing characteristics from their own. They also lacked experience in operating gliders at night, British doctrine having hitherto been that glider missions at night were out of the question. The Americans had had little advanced training and hardly any under combat conditions. The delay in training was thus a serious matter.<sup>29</sup>

Late in March the troop carriers had obtained

\*Up to 23 May NAAFTCC had hoped to protect its planes by the addition of machine guns and self-sealing gas tanks. It gave up the idea only when it was clear there was no time to install them (Diary, Hq NAAFTCC, Apr. passim, 6, 23 May 43).

†Some doubts of troop carrier proficiency, particularly in navigation, seem to have arisen at NAAF about this time but were allayed by optimistic reports from Brownlow that the crews were ahead of schedule and that their navigation was much better than had been supposed. (Ltr Air Commodore R. M. Foster, Force 141, to Gp Capt L. T. Parkhurst, A-5, NAAF, subj: Troop Carrier Operations, 28 May 43, in 612.305.)

a few French gliders and attempted to tow them with jeeps. The gliders scarcely got off the ground. After a shipment of American Waco (CG-4A) gliders had arrived at Accra on the Gold Coast, troop carrier pilots were dispatched on 24 March to fly them back, but found them in such bad condition through neglect and tropical weather that not until 22 April were they able to assemble and fly back four sample Wacos. On the 23d the first consignment of the 500 gliders allotted to the theater began arriving at North African ports. Within 2 or 3 days over 50 of them were unloaded, but they were far from ready for use.<sup>30</sup>

The gliders arrived unassembled and in crates, five crates for each glider. They were unloaded haphazardly at several ports. The result was that assembly was repeatedly delayed because one or more of a set of crates had been unloaded at a different point from the rest. Important instruments were unavailable; assembly was delayed for days for lack of suitable tensiometers. At first neither the difficulty nor the importance of glider assembly was realized.

The situation at Blida, one of the assembly centers, may be taken as an extreme example. Some 25 of the first gliders to arrive at Algiers were sent there on the spur of the moment because no provision had been made for them at the depot at Maison Blanche. Missing parts or needed equipment had to be trucked 30 miles from Algiers. Assembly at Blida was given sixth priority and entrusted to one officer and twenty enlisted men, all inexperienced.

Elsewhere, too, glider assembly had a low priority and, despite appeals from Troop Carrier Command, NAAF was reluctant to upset depot and service center arrangements by ordering a higher priority. By 5 May 74 gliders had arrived in the theater and 18 had been assembled. By 25 May 240 gliders had arrived, but only 30 had been assembled. Then came the decision to use gliders to spearhead the British assault. No wonder General Dunton, commander of XII AFSC, referred in late May to an "extreme emergency" in glider assembly.<sup>31</sup>

Once the crisis was realized, it was met. Service Command ordered that gliders be given priority even over P-38's. Additional manpower was provided. Troop Carrier units lent their experienced glider mechanics to speed the work, and assembly-line techniques were developed. By 13 June,

346 gliders had been completed and delivered, ample as it turned out for both training and operational needs.<sup>32</sup> Meanwhile, however, irreplaceable training time had been lost. The British Horsa gliders intended for 38 Wing did not ease the situation since they were not flown to Africa from England until late in June.<sup>33</sup>

Once assembled, gliders were not always usable. On 7 May, of 20 gliders assembled only 6 had been delivered to troop carrier units for lack of British static cables. Next day all the gliders on the field at La Senia were damaged by wind. Extreme temperatures combined with maintenance by indifferent and inexperienced personnel caused rapid deterioration. On 16 June most of the gliders in troop carrier possession were grounded for repairs, and by 30 June so many gliders had developed weaknesses in the tail-wiring that all were grounded for three days. The glider-plane intercom kits did not arrive until the very last minute, too late for practice and almost too late for use.<sup>34</sup>

Thus it was that during the first two weeks of June the 51st Wing was unready for anything but limited training in the fundamentals of glider-loading and glider-towing. The first practice mission with gliders was held on 14 June when the wing flew 54 Wacos with British pilots over a triangular 70-mile course and released them to glide down onto Froha airfield. The pilots flew in four-plane formations spaced at two-minute intervals. On 20 June, glider mission "Eve" was flown in like formation and over a similar course with 38 Wing\* as an added participant. The results were good, but the exercises had not been realistic. In both of them the gliders had been released by day to land on airfields.<sup>35</sup>

To prepare for possible paratroop missions after D-day, the 51st Wing had flown four practice missions with fair success. On 10 and 12 June it had dropped a battalion. On 16 and 18 June the 51st dropped a brigade in the evening and at night respectively over dog-leg courses similar to those it might fly in HUSKY.

After the second glider maneuver the training period ended, and the move to the take-off fields began. According to Troop Carrier Command, the British glider pilots had been given an average of 4.5 hours flying the Waco, including an average of

\*38 Wing was attached to the 51st for operations and training.

1.2 hours of night flying. They had made about 16 landings apiece. A British observer wrote bluntly "... practically none of our glider pilots have sufficient training, and it is too late to rectify this omission now." Since the equally inexperienced American pilots were not slated to participate in D-day operations, they had received less instruction and practice than the British. There had been no mass release of gliders over water or at night and very little practice in landing gliders under combat conditions.<sup>26</sup>

On 21 May General Williams had moved his headquarters from Casablanca to the village of Oujda, 100 miles west of Oran. There he could observe the progress of the 52d Wing and the 82d Division, which were scheduled to train in that area. By 23 May both wing and division were fully established at their training bases and had been joined by the three squadrons of the 316th Troop Carrier Group lent by the Ninth Air Force for HUSKY. Absent was the 64th Troop Carrier Group, which remained at Blida engaged in air transport work until a detachment of the 315th arrived from England to relieve it. The 64th began its move to the training area on 3 June. Troop carrier training during May was hampered by delays in arrival of equipment, and by the fact that work on the satellite fields which were to carry the bulk of the training traffic was not completed until 25 May.

On 1 June joint training of airborne and troop carrier units was begun. Three weeks had been allotted for this training. An experienced command with over-all authority and full knowledge of the units involved would have been pressed for time. No such command existed. Troop Carrier Command had practical experience in airborne operations but authority only over troop carrier units. It did not have authority over the airborne division and lacked firsthand knowledge of the capabilities of the 52d Wing. The Fifth Army airborne training center at Oujda had been experimenting with airborne tactics but had no authority over either airborne or troop carrier units. The wing and the division set up a joint planning staff and cooperated cordially, but few members of either staff had had combat experience, and the division staff was filled with officers who had never served as parachutists themselves. Inevitably, the program they planned was somewhat unrealistic.<sup>27</sup>

The wing concentrated on the fundamentals of

cross-country navigation and on formation flying. It adopted the V of V's formation with 9- and 12-ship flights later taken as standard for parachute operations. The division concentrated on ground training. After having several casualties in parachute jumps, it became reluctant to risk its men in drops under field conditions. Two practice missions were held at night under conditions simulating those to be encountered in HUSKY. The first, carrying the 505th Parachute Combat Team, scattered stragglers at every turn. The second, carrying the 504th PCT, proved deceptively successful. The formations held together despite a thunderstorm and arrived at their objective on schedule. Only the jumpmasters in the lead planes actually jumped, but these token drops were accurate.

On 20 June training ended. Advanced echelons had begun the trek to Tunisia on the 16th, a move not completed until 4 July. The towing of gliders loaded with men and equipment during this move was the only glider training the 52d received in Africa. It is perhaps as well that plans for the employment of the 52d in a glider mission were never fulfilled. No full-scale rehearsal had been held. No time had been given to the pathfinder techniques developed at the airborne center. Above all, the wing was still insufficiently trained in formation flying, navigation, and drop-zone location at night. At least one group commander later felt that the Troop Carrier Command was far too optimistic as to its crews' proficiency.<sup>28</sup>

During the training period a reconnaissance of the objective was conducted at the request of Col. James M. Gavin, who was to lead the Parachute Task Force in HUSKY 1. With two battalion commanders and three officers of the 52d Troop Carrier Wing he was flown over the drop area on 10 June. Very little antiaircraft was encountered, and under a quarter moon like that which would shine on the actual mission the landmarks seemed to be unmistakable.<sup>29</sup>

#### Final Preparations

The build-up in Tunisia lasted from the middle of June until shortly before D-day. An advance party of the Troop Carrier Command reached Sousse on 26 June, and the command was officially established there on the 28th. On 5 July it set up an advance command post at La Marsa conveniently close to the headquarters of Tactical Air

Force, which was to have operational control over the command during HUSKY.<sup>40</sup> By 2 July, 38 Wing and the 60th and 62d Groups of the 51st Troop Carrier Wing had moved to the Sousse area. The 51st command post was set up in an olive grove near Goubrine beside that of its partner, 1 Airborne Division, which was bivouacked nearby. However, most of 38 Wing's Horsa gliders and the Halifax bombers to tow them did not arrive in Tunisia until 6 July. The Halifaxes had needed 17 modifications which took six weeks to accomplish.<sup>41</sup> Only 19 of the 30 Horsas sent from England had survived the trip.

By 4 July the five groups assigned and attached to the 52d Troop Carrier Wing had occupied their eight fields around Kairouan and the one at Enfidaville and set up a wing headquarters five miles from Kairouan adjoining that of the 82d Division. On the same day the 329th Service Group arrived and on the 5th set up a service center for the troop carriers conveniently located at M'Saken, a road junction about five miles southwest of Sousse.<sup>42</sup>

No further training was attempted. D-day was too near. However, NAAF, perhaps remembering the scanty briefing for TORCH, had authorized the command to begin briefing as early as 1 July. Each group appears to have set its own schedule. The 313th Troop Carrier Group began briefing squadron commanders and intelligence officers on 1 July. Most, however, started two or three days later. The pilots in the 60th Group had to spend two hours each morning from 5 to 9 July studying maps and photographs, but the earliest formal briefing of pilots seems to have been on the 7th by the 64th Group. Most groups began formal briefings of pilots after supper on 8 July.<sup>43</sup>

Some protests were made later that briefings ignored or underestimated the high winds encountered on the mission. However, reasonably accurate weather reports were available and were transmitted to the flyers, at least in most cases. Others claimed that early briefing and cramming had caused unnecessary strain and confusion. The 51st Wing complained that it had had to call on its British airborne teammates to supplement its maps and photographic coverage. Nevertheless, the briefing was generally considered satisfactory.<sup>44</sup>

In describing the four major airborne missions accomplished by the troop carriers during the invasion of Sicily, it is convenient to begin with

HUSKY 1 and its successor, HUSKY 2, which employed American troops carried by the 52d Wing. Sixteen squadrons of the wing were based on the plains around Kairouan. The other three, belonging to the 316th Group, were 30 miles north at Enfidaville. On 9 July final briefing was completed; the planes were loaded and checked; and the wing stood ready for HUSKY.

#### **The First HUSKY Mission**

In its final form HUSKY 1 was designed to drop the 505th Parachute Infantry Regiment, reinforced by the 3d battalion of the 504th, two batteries of 75 mm. pack howitzers, a company of engineers and sundry small detachments, a total of 3,405 men, on high ground about five miles northeast of the port of Gela between 2340 on 9 July and 0030 on D-day, 10 July. Their commander was Col. James M. Gavin. Their mission was to protect the 1st Division, which was scheduled to land on the beaches around Gela at H-hour, 0245 on 10 July, by barring the roads leading to Gela from the north and east against German reserves located at Caltagirone. After junction with the 1st Division the paratroops were to assist it in taking the important airfield of Ponte Olivo five and a half miles north-northeast of Gela. Both of these tasks were considered of vital importance to the success of the invasion.<sup>45</sup>

After supper on 9 July the troops reported to the airfields and climbed aboard the planes. About 2015, eager squadrons of the 61st Troop Carrier Group began taking off. By 2045 the last squadron of the last group was starting down the runway. The dust at some fields was so thick it could be seen five miles away and many pilots had to take off on instruments.<sup>46</sup>

The troop carriers took off in 3-ship elements at 30-second intervals. Once in the air they formed in stepped-up V's of V's, composed, as far as possible, of nine-ship flights, from every squadron, with additional planes from various squadrons fitted into composite flights. Each group circled and assembled over its home area.

To avoid enemy observation they kept below an altitude of 1,000 feet during assembly. Then they flew out through a coastal corridor between Hergla and Bou Fichta. The 1st Air Defense Wing provided fighter cover over Tunisia until the expedition departed.

The Kuriate Islands, 40 miles southwest of the



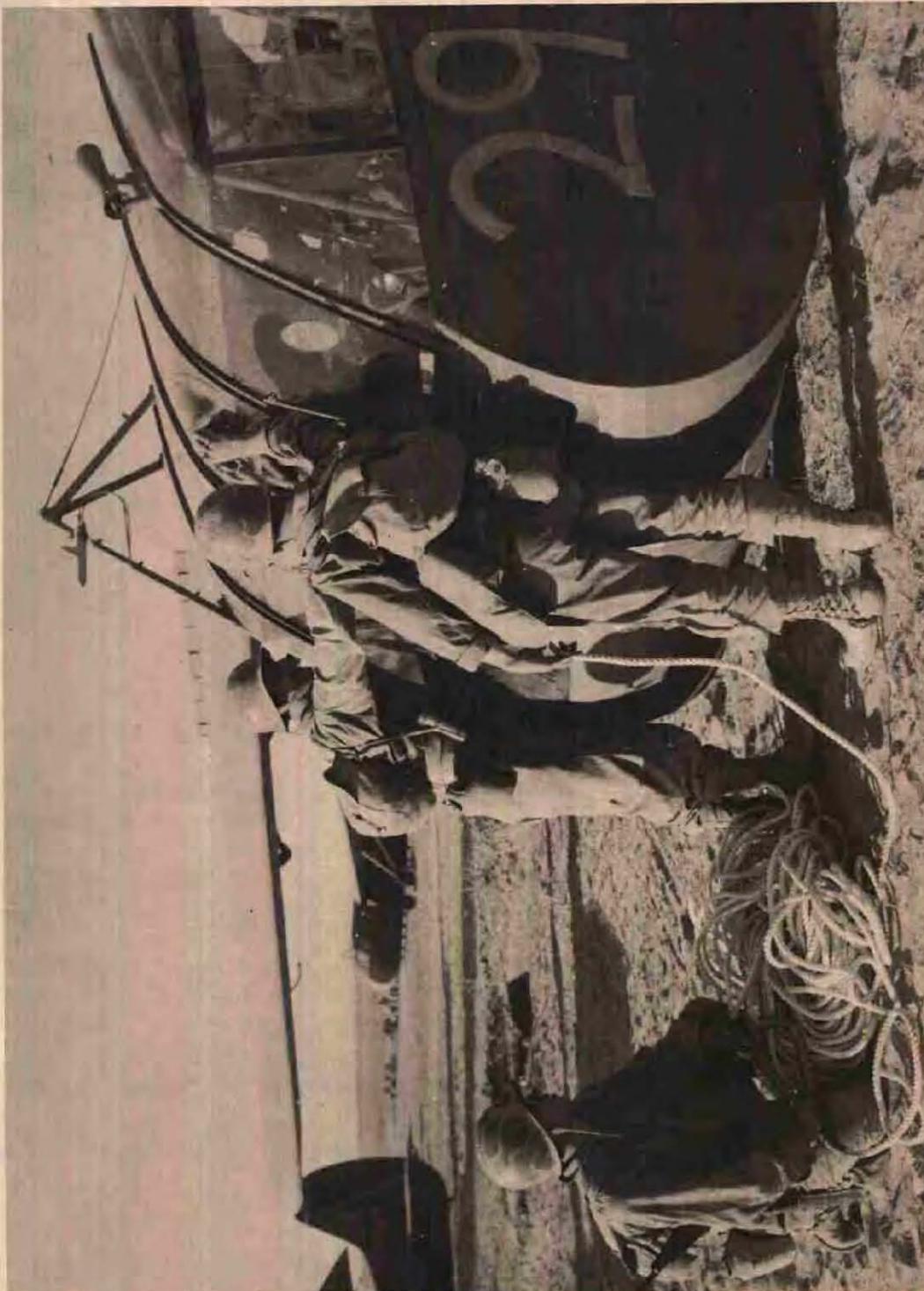


Figure 1. Airborne Troops Hitch Tow Rope to Waco Glider in North Africa.



Figure 2. Paratroops aboard C-47 during invasion of Sicily, 9 July 1943

corridor, were the initial point on the route. There the carrier groups took up the sequence and intervals which they were supposed to keep for the rest of the trip. Lt. Col. Willis W. Mitchell was to lead 39 aircraft of the 61st Troop Carrier Group past the islands at 2122. The 314th Group with 50 aircraft would follow 6 minutes later. Then the 313th with 53 planes, 3 squadrons of the 316th with 35 planes and the 64th Group with 49 planes were to follow at 10-minute intervals. All groups sent their quotas except the 316th which provided only 33 planes, and the 64th, which compensated by sending 51. In all there were 226 planes spread over a distance of about 100 miles. From the Kuriares the route ran straight to the southeast tip of Malta and from there 62 miles northeast to a point 9 miles southwest of Cape Passero at the eastern end of the south shore of Sicily. To avoid enemy observation, the transports were to fly low, not higher than 500 feet. Long before Sicily was reached a large part of the expedition was off route and off schedule.<sup>47</sup>

Visibility was the biggest problem. The sun had set as the planes were leaving Africa, and the quarter moon gave little light. Only dim night formation lights were used, and, as the Oran mission had shown, these could be seen only so long as close formation was maintained. It was as much as the pilots could do to keep track of the plane ahead of them. Some low-flying planes were further hampered by the salt spray on their windshields.<sup>48</sup> It was a difficult situation for men inexperienced in night formation flying and unfamiliar with the V of V's. Since strict radio silence had been imposed, the only way to assist stragglers was by means of Aldis lamps, flashed backward from the dome. This had worked well in training exercises, but in HUSKY it proved insufficient to hold the formation together.

Allied with the darkness was the wind, which, when the mission set out, was blowing from the northwest at 25 to 30 miles an hour. This was twice the maximum considered safe for a paratroop jump. Had it not quieted considerably before midnight, very few of the 82d Division would have come down uninjured.<sup>49</sup> It did blow long enough and hard enough to slew the rear groups of the troop carrier formation off course.

These deviations brought many planes over the convoy routes, but the naval gunners gave them no trouble. Invasion convoys were sighted be-

tween Malta and Sicily, and two flights flew over "hundreds of vessels" without attracting fire. At least one returning squadron, challenged by a ship, answered as prescribed by blinking a red belly light, and was allowed to depart in peace. Apparently only one ship, four miles off the beaches near Gela, fired at passing planes.<sup>50</sup>

From Cape Passero the route ran eastward off the coast of Sicily for 35 miles to a point off Punta Secca where it turned northward to follow the coast for 14 miles to the mouth of the Acate River, 5 miles east of Gela. That the pilots hugged the coast as tightly as they could is attested by the warning in one mission report, "Beware of running into lighthouse at Punta Secca."<sup>51</sup> At the mouth of the Acate the course turned inland and ran almost due north over Lake Biviere to the drop zones. Assuming that the mission had to go by way of Malta, this path was perhaps the best possible. The Sicilian coastline under normal conditions would be an infallible guide; the river and lake were suitable checkpoints, and flight over enemy guns was cut to a minimum. Unfortunately, the moon set as the first planes reached their drop zone, and the rest had to grope their way over Sicily in almost complete darkness.

The darkness did prove of some value as a shield against enemy fire. Despite the efforts to destroy searchlights, three or four were observed, but they were ineffective. A few antiaircraft batteries were in action, and light machinegun fire was encountered all around the drop area. Nowhere was the fire very accurate or very intense. No enemy planes were seen.

Surprise was also a protection. Efforts to destroy enemy radar by bombing had been only partly successful. As a further precaution several B-17's equipped with jamming devices had been sent ahead of the mission to cruise off the coast. The results were satisfactory. The Axis forces in Sicily appear to have had no warning until 2220 and none in the Cape Passero area until about 2330, too late to intercept the HUSKY mission. It is noteworthy that the first flight of troop carrier planes, passing over their objective at 2332, had little opposition and no losses. Lt. Gen. Carl Spaatz, then commander of NAAF, considered that "complete surprise was obtained."<sup>52</sup>

However, the mission was by no means a "milk run." Eight aircraft were lost to hostile flak and machine guns. All had completed dropping their

troops before they were hit, and about half the crews survived to rejoin their units a few days later. Slight damage was done to approximately 10 planes. Three pilots, unable to find their objectives, returned without making a drop.<sup>53</sup>

After the drop the planes were to circle on a 5-mile radius around Gela to the shore and fly westward for 25 miles, keeping within 4 miles of the coast to avoid convoys which were approaching Licata. Beyond Licata they would turn out to sea and go home by way of Pantelleria at an altitude of 6,000 feet.<sup>54</sup> The return was not made according to plan. The 64th Troop Carrier Group was the only one to keep its formation until it left Sicily, and as it passed Licata, 10 planes in the rear broke away to dodge a searchlight, lost their way, and landed at Sfax. The rest of the groups, as will be seen, had broken up, and many of the stragglers lost their way. However, all reached friendly fields. The first aircraft were welcomed back at 0125. At 0620 stragglers were still coming in.<sup>55</sup>

The returned pilots complained that darkness, enemy fire, and the flames and smoke caused by Allied diversionary bombings near the drop area had made it difficult for them to see their way. Still their reports were so optimistic as to make the Troop Carrier Command announce that 80 percent of the paratroops had been dropped on the designated drop zones.<sup>56</sup> This was a prodigious overestimate.

The operations of the five troop carrier groups over Sicily varied widely, but none had gone according to plan. Neither did they resemble the optimistic accounts rendered by most of the pilots. The 61st Troop Carrier Group, flying in the lead, was supposed to drop the 3d Battalion of the 504th Parachute Infantry Regiment at 2340 on Drop Zone O about two miles south of the town of Niscemi and ten miles inland from the mouth of the Acate. The road leading west from Niscemi to Gela passed through the DZ, and that running south adjoined the east side of the zone. The troops were to set up road-blocks and halt the movement of German reserves along those arteries.

The group, blown along by the wind, reached Malta 12 minutes ahead of schedule. Many of its planes were already straggling. Two went so far astray that they missed Sicily and reached the toe of Italy. The group commander, however, held to his course, passed over the drop area at 2332

with about 9 aircraft and jumped his men from a height of 700 or 800 feet a mile or so east of the DZ. The paratroops were close to their objective, but they were badly dispersed. At 0900 next morning the largest group assembled in the area had 24 men. They entrenched themselves at Castel Nocera on a secondary road two miles east of the DZ and there effectively repelled an enemy attack. A smaller group joined them in the afternoon. Within 2 days about 100 men had gathered at Castel Nocera. They were in no position to block the main roads from Niscemi, but on 13 July they attacked a retreating German column with notable success. On 14 July, after nearly five days on their own, they were relieved by the 1st Division.

Aside from the little band at Castel Nocera, the men of the 504th had been scattered over an area from Niscemi to Pachino, 50 miles away. Many of them were captured. The rear of the 61st Group had become completely dispersed, and there seems to be only one instance in which they dropped three sticks of troops within assembly distance of each other. Six loads, probably dropped deep in enemy territory, were still unaccounted for a month later.<sup>57</sup>

Behind the 61st flew the 314th Troop Carrier Group. It was to drop the 3d Battalion of the 505th PIR on DZ T just south of the main coastal highway at a point about five miles east of Gela where the highway bent sharply and made a junction with the road running south from Niscemi. The zone lay about three miles north of the checkpoint, Lake Biviere. It was easy to reach and easy to identify once the lake was seen.

The 314th made its way, still in good formation, as far as the Acate. Unfortunately, most of the group failed to see the checkpoints and circled out to sea for another try. One flight, carrying I Company of the 505th, did see the checkpoints, turned inland and dropped its troops squarely on DZ T at 2349. The mission of the battalion was to take and hold high ground to the south which commanded the road junction and to make contact with the 1st Division. This task I Company boldly accomplished. About dawn a patrol which it had sent out met troops moving inland from the beaches.

The main body of the 314th Group missed the checkpoints again on its second try and veered off to the east. It dropped about 85 men of G

Company near the Acate River about 3 miles east of their drop zone. Assembling within an hour, they took and held the main highway bridge over the river. Most of the rest of the 3d Battalion of the 505th were dropped in the Vittoria area from 10 to 15 miles east of their objective. About 180 of them had assembled by 1900 on D-day under the battalion commander, Major Krause. They bivouacked that night on the Gela-Vittoria highway about five miles west of Vittoria.<sup>58</sup>

The 313th Troop Carrier Group, bringing the 1st Battalion of the 505th PIR, was to be the third group over the drop area. Its objective, and that of the next two groups as well, was DZ S, located northwest of the junction of the Niscemi road and the coastal highway and less than a mile north of DZ T. The large body of paratroops dropped on DZ S was to take the crossroads and defend it. The 313th was blown far off course. At least 1 squadron missed Malta by over 20 miles. All or most of the group made landfall on the east coast of Sicily, and 23 planes dropped their troops around Avola in the British sector, 50 miles east of their destination, in the belief they were near Gela. About 65 of these men assembled in time to help the British take Avola.<sup>59</sup>

Airborne and troop carrier accounts disagree as to whether the 49th Squadron of the 313th Group made landfall on course, but they certainly did find their way to Lake Biviere and at 0035 dropped part of A Company about two miles northeast of the drop zone. Though hampered by enemy fire, about 100 men had assembled by 0630 on D-day. They took an enemy strongpoint, set up a road-block on the Niscemi road, and used carbines and bazookas to beat off a German force with six tanks. Then they turned south to take the junction of the Niscemi road and the coastal highway. They found the pillboxes there a formidable obstacle, but at 1045 they induced the Italian occupants to surrender by threatening to direct naval artillery fire against them. The paratroops had no contact with the navy or anyone else,\* but their bluff went unchallenged. An hour after they had taken the crossroads, elements of the 1st Division reached the spot.<sup>60</sup>

The 316th Troop Carrier Group flew next to last. Aboard its three squadrons was a miscellany

\*A four-man Air Support Detachment jumped in the next serial, but their equipment, an SCR-284, was lost in the drop, so they were unable to operate. (Bradley, *A Soldier's Story*, p. 182; Hist 3d AAF Air Support Communications Sq., activation—1 Sep 43.)

of regimental headquarters personnel, artillerymen, engineers, signalmen and medics, all lumped together as the Headquarters Serial. The task force commander, Colonel Gavin, flew in the lead with the group commander, Col. Harold L. Clark, commanding officer of the 52d Wing flew in the rear aircraft of the serial.

The 316th fared worst of all the groups. Deflected by the wind, it missed Linosa; it missed Malta; and it missed the south coast of Sicily. It made landfall on the east coast near Syracuse. The group commander realized where he was and cut across the southeast corner of Sicily to get back on course. Three pilots in the rear carrying a demolition section which was to drop on a separate drop zone and blow up a railroad bridge over the Acate assumed that the group was turning in over the drop area. Accordingly, they dropped their troops near a bridge south of Syracuse, 65 miles from their objective. Over Sicily the rest of the 316th promptly lost their way again, dispersed, and dropped their passengers, including the task force commander, all over southeastern Sicily.<sup>61</sup>

Colonel Gavin picked himself up after his jump and found that he was alone in a strange land unlike anything shown on the maps of the drop area. He was by no means sure it was Sicily. Half an hour later, after finding two staff officers and a dozen enlisted men, he set out to look for his task force. Though a few more men joined him before dawn, lack of numbers compelled them to hole up next day. Emerging after dark on the 10th, they met troops of the 45th Division, who informed them that they were 5 miles southeast of Vittoria and about 25 miles east of the drop area. Once oriented, Gavin hurried west.

At dawn on 11 July he passed through Vittoria. About 0600 he came upon the bivouac of Major Krause's 180 men and bade them follow him. Further on he picked up 20 more parachutists and 40 men of the 45th Division, most of which had been halted further to the south. They told him there were large German forces ahead. Gavin, who by now commanded about 250 paratroops, decided to attack. A short patrol action sufficed to drive the enemy off Biazzo Ridge eight miles east of Vittoria, but just beyond it Gavin ran into a German battalion backed by other forces of unknown strength. He chose to dig in. He could not advance, and the ridge, which dominated that part of the coastal highway, was a defensive posi-

tion well worth keeping. On the ridge his troops were reinforced by two 75-mm. howitzers from the artillery in the Headquarters Serial. Since he had no artillery and most of the bazookas dropped had been lost, these howitzers were an invaluable help against enemy armor.

During the afternoon the German hammered the ridge with artillery and mortars and attacked with tanks. Their superior firepower took heavy toll. By 1500 two-thirds of Gavin's men were dead or wounded, and German tanks were 50 yards from his command post. Just in the nick of time heavy artillery fire fell on the advancing enemy. A liaison officer had brought word of the situation to II Corps, which in turn had informed Western Task Force. Both corps artillery and naval guns had gone into action to support the paratroops on the ridge. By 1900, 100 more paratroops, mostly from Headquarters Serial, had arrived and the 45th Division had provided 11 Sherman tanks. Gavin ordered a counterattack and the Germans retreated. By 2200 the battle of Biazzo Ridge was won.<sup>62</sup>

The 64th Troop Carrier Group brought up the rear in HUSKY 1. Like others its planes missed the bright beacons of Malta and were still lost when, shortly before midnight, they arrived over Sicily. They were unique in that the whole group kept formation. At 0025 they dropped the 2d Battalion of the 505th PIR en masse. The battalion jumped at an altitude of 1,300 feet above sea level onto a plateau south of Comiso, 25 miles east of its drop zone. It was under fire during and after the drop and engaged in sharp fighting during the morning of D-day. Nevertheless, the troops cleared the area and completed assembly by noon. In the afternoon they attacked and captured the town of St. Croce Camerina. Neatly demonstrating the value of concentration in a parachute drop, the 2d battalion had defeated large enemy forces and taken about 200 prisoners. Late that day it made contact with the 45th Division for which it had made a most efficient advance guard. Next day the unit reorganized and marched westward to rejoin its regiment in the Gela area.<sup>63</sup>

Besides being the first major paratroop operation to be performed at night, HUSKY 1 was by far the largest such operation undertaken until the invasion of Normandy in July 1944. It was a major effort involving more transport aircraft than there were in the entire AAF when the Japanese

attacked Pearl Harbor. The results were disappointing. Less than a sixth of the paratroops supposed to arrive in the drop area were delivered on or near it.<sup>64</sup>

The primary mission of the task force, the seizure of the junction of the Niscemi road with the coastal highway had been accomplished, but it was done by I Company and a fraction of A Company of the 505th with no supporting artillery. They could hardly have taken the crossroads against German opposition. Gavin's experience at Biazzo Ridge indicates that they could not have held it long against even a single Panzer battalion.

At Castel Nocera and the Acate crossing small forces performed tasks roughly in accordance with their mission. The rest of the troops were widely scattered. At 0755 on the morning of 12 July, General Ridgway reported to the Seventh Army that he had "no formed element of Combat Team 505 under my control" and that he had the equivalent of one infantry company and a battery of 75-mm. howitzers available for use.<sup>65</sup> By 14 July, when the 505th was reassembled, the enemy was in retreat and the beaches were secure.

On the 45th Division front important successes were obtained by the 2d Battalion around St. Croce and by Gavin's troops at Biazzo Ridge. Elsewhere on that front there were three or four instances in which three-plane elements, making their drop in formation, produced bands of paratroops in about platoon strength. These fought courageously and were of real help in clearing the way for the 45th Division. Among their exploits were the routing of one battery of Italian field artillery, the surrender of another, and the capitulation of the Italian garrison of Vittoria. How they would have fared against foes less eager to surrender is problematical.<sup>66</sup> Certainly, it was pure good fortune that the troops dropped east of the 1st Division were in a position to help the 45th Division and the Eighth Army and to receive their support. Such a situation was not contemplated in the plans. Had the invasion beaches extended west rather than east from the Gela-Licata area, the courage of those paratroops would have been fruitless and the majority of them would have ended in German prison camps.

Over a third of the task force were dropped in single sticks widely dispersed. Their guerilla exploits undoubtedly helped to demoralize the enemy but were a wasteful use of crack troops.

Even so HUSKY I achieved a qualified success. An American general stated that it saved 48 hours for Seventh Army. Marshal Kesselring's postwar reminiscences belittled the effectiveness of the airborne troops in HUSKY, calling them "weak" and "scattered". Yet Kesselring admitted that they "very considerably impeded the advance of the Hermann Goering Division."<sup>67</sup>

On the other hand, the operation revealed grave weaknesses in troop carrier capabilities. General Ridgway felt it had "demonstrated *beyond any doubt* that the Air Force . . . cannot at present put parachute units, even as large as a battalion within effective attack distance of a chosen drop zone at night."<sup>68</sup> Since the risks of an airborne mission by daylight appeared prohibitive, the proponents of airborne warfare were faced with an ugly dilemma. A solution was sought through greater training in night formation flying, the development of pathfinder tactics, and the introduction of new aids to navigation.<sup>69</sup>

#### The Second HUSKY Mission

About the middle of June when the planning for HUSKY mission was approaching completion, a new airborne project had been conceived. This was to fly the two remaining regiments of the 82d Division to Sicily before D plus 6 and deposit them within the Allied lines as reinforcements. Several glider and parachute missions were designed for the purpose. All involved flight over Allied troops and probably over the heavy convoy traffic in the invasion area. None could be established in advance, since their feasibility depended on the success achieved by the invasion.

On 21 June, General Ridgway, well aware of the naval attitude toward aircraft over convoys, went to General Browning to get a guarantee that such reinforcement missions would not be fired upon. Browning replied that Western Task Force could control its war ships but had declined to be answerable for the gun crews of merchantmen and small escort craft. Next day, Ridgway took his case to a conference presided over by Eisenhower himself. There the naval representative refused to provide a corridor for any airborne mission after D-day. General Ridgway then took the drastic step of notifying Maj. Gen. Geoffrey Keyes, Patton's chief of staff and deputy commander of Force 343, that "unless satisfactory assurances were obtained from the Navy, I would recom-

mend against the dispatch of airborne troop movements."<sup>70</sup>

Patton's task force had no desire to lose its airborne cohorts. It supported Ridgway to such effect that within two or three days an agreement was reached that Western Task Force would withhold fire over a prescribed corridor during the time set for the reinforcement missions. Just when and how the timing and corridor were selected is obscure, but it was finally decided that the missions would be timed so that the lead planes would make landfall off Sicily at 2230. Their course was to be from the Kuriaes around Malta and from there to Sampieri\* on the Sicilian coast. Sampieri, about 30 miles east of Gela, was on the extreme edge of the American zone of operations. Routing the troop carriers through there would seem to be the best way to avoid the convoys off the invasion beaches. Once over the coast, the planes were to fly toward Gela over a corridor two miles wide and roughly two miles inland at an altitude of about 1,000 feet. After dropping their troops or releasing their gliders, the troop carriers were to proceed parallel to the shore and two or three miles inland past Licata on the western edge of the invasion area before turning out to sea. On 7 July, Force 343 sent messages containing this information to its corps and divisions and to the U. S. Navy. Its courier was informed at central embarkation headquarters in Tunis that Western Task Force had received the message.<sup>71</sup>

General Williams said in August "they [the Navy] knew the exact operation six days before."<sup>72</sup> Admiral Hewitt officially asserted that he did not receive the instructions until his fleet was at sea under radio silence, and that he would have opposed the decision if he could.† At least he had

\*Several troop carrier accounts name Donnalucata, five miles west of Sampieri, as their entry point. Evidence as to the cause and significance of this discrepancy is lacking. (Hist 61st TC Gp and 53d TC Sq Jul 43.)

†His statement, while far from accurate, is so revealing of the Navy viewpoint as to deserve citation: "The Air Force did promulgate by dispatch to the forces at sea, the planned approach and egress of transport planes carrying paratroops on the night of D-1/D day (sic). Written information on the plans for the employment of paratroops was never received. The matter of routing transport aircraft in the assault area had not been submitted to the Naval and Military Commanders for examination with a view to early recognition of implications to those two services. In point of fact the route selected by the Air Force was not suitable from a naval standpoint. The Naval Commander however, received this unilateral decision only after radio-silence was imposed, and he was unable to give voice to his objections." (Action Report Western Naval Task Force, The Sicilian Campaign Operation "HUSKY" July-August 1943, pp. 18, 90, in KC RC, Seventh Army File, No. 370.2)



been notified of the projected missions and so had the other headquarters concerned.

At 1800 on 10 July the troop carrier units were alerted for the parachute operation, which is known as HUSKY 2 or by its code name as MACKALL WHITE. The situation was not deemed favorable, and about half an hour later the mission was postponed.<sup>73</sup>

At 0839 on 11 July, General Ridgway sent orders from Sicily to 82d Division Rear in Tunisia to proceed with MACKALL WHITE. The order was received in North Africa at 1100 and acknowledged at 1115. Motivated, perhaps by Ridgway's misgivings, Seventh Army notified its own corps and divisions of the impending mission and warned them against firing on it. The army also notified XII Air Support Command and Western Task Force and asked them to direct their units to take care not to fire on the troop carriers. Time was short, but Lt. Gen. Omar N. Bradley, commanding II Corps, was informed that afternoon that the notification of his troops had been accomplished.<sup>74</sup>

The objective of MACKALL WHITE was to drop the 504th PIR (less its 3d Battalion), the 376th Parachute Field Artillery Battalion, and a company of Engineers at Farello, an abandoned airfield three miles east of Gela. They were to be flown to their destination by 144 planes, drawn almost equally from the 61st, 313th, 314th, and 316th Troop Carrier Groups of the 52d Troop Carrier Wing. (The 64th Group was being returned to the 51st Wing.) Owing to the relatively light losses in HUSKY 1, the 52d had more than enough planes for the task in hand.<sup>75</sup>

Not until comparatively late did the troop carrier units get word of the task ahead of them. One squadron got its orders at 1600 and was briefed at 1700. At 1900 the first aircraft took off. The last group to leave began taking off at 1945.<sup>76</sup>

The flight tactics used in HUSKY 2 closely resembled those of HUSKY 1, but with some significant differences. As before, the planes left the ground in 3-ship elements at 30-second intervals, and the basic formation was the 9-ship V of V's. However, this time the formation was stepped down, making it easier to see the silhouette of the lead aircraft against the sky.<sup>77</sup>

The 313th Troop Carrier Group, flying in the lead, was to pass the Kuriate Islands at 2016. The 61st, 314th and 316th Groups were to follow at 10-minute intervals. By leaving the

an hour earlier than in HUSKY 1 the pilots would have daylight as far as Linosa. The route ran north of Linosa to the midpoint of the coast of Malta. Accounts vary as to the height flown en route but it appears to have been between 700 and 1,000 feet above sea level.<sup>78</sup>

All at first went well. The night was clear and calm. The moon shone bright. The pilots, confident that the mission would be a "milk run," were concentrating with admirable success on correcting their weakness in formation flying. They rounded the southeastern corner of Malta and approached Sicily in good formation and approximately on course. North of Malta a few encountered convoys and were fired upon. Though the fire had little effect this was a bad omen. It showed that three days of tension had tightened the trigger-fingers of the antiaircraft crews.<sup>79</sup>

Over Sicily scattered cumulus clouds at about 1,000 feet made it harder to keep formation and led some flights to make minor changes in altitude to fly over them. This made identification from the ground somewhat more difficult. At the same time a light ground haze may have blurred the pilots' view of the landmarks in the corridor.<sup>80</sup> How much influence these mildly unfavorable conditions had on ensuing events no one can say.

The first flight or two of the 313th Troop Carrier Group flew tranquilly to Farello airfield and made their drop slightly before 2240, five minutes ahead of their scheduled time. The squadron behind them had already sighted Lake Biviere and this indicates they were inside the corridor. At that moment one nervous gunner opened fire. It has never been clearly established whether the fatal shot came from land or sea, nor does it much matter. Almost instantly machine guns and anti-aircraft batteries afloat and ashore opened up for the entire length of the invasion beaches.<sup>81</sup>

The 313th attempted to fly out along the corridor according to plan but was apparently driven to make a premature exit over Licata and encountered heavy fire from the convoys concentrated there.

When the barrage began, the first flights of the 61st Troop Carrier Group were just entering the corridor. Their rear two squadrons, still 5 or 10 miles offshore, were hit very hard by naval fire on which "no amount of recognition signals had the least effect."<sup>82</sup> Since the approach to the corridor was supposedly free of shipping, someone

was out of position. It should be noted that no such trouble was reported by the two last groups.

The incessant fire effectively scattered the troop carrier formations. They scattered, reformed bravely, and scattered again. Eight pilots gave up and returned with full loads. The rest dropped their troops as best they could. Not unnaturally, they were inclined to drop them prematurely, miles east of Farello. Six planes were shot down before dropping their troops. However, a great many pilots preferred to head for open sea after the drop rather than run the gauntlet for another 35 miles on the prescribed course. This was a costly mistake. The desperate pilots flew over the coast "on the deck" taking violent evasive action. This was the instinctive and only way for a C-47 pilot to protect himself.<sup>83</sup>

The convoys had endured 23 air attacks that day, including a recent night attack, which had been aided by the light of a burning ship. They had fired so much on their own fighter cover that the remarks of the RAF pilots on the subject had become lurid. Their reaction to unidentified and unexpected aircraft as big as medium bombers diving low over their decks was quite predictable. They fired and kept on firing. Some aircraft were under fire for as much as 30 miles after leaving Sicily. It is probable that a majority of the troop carriers shot down in HUSKY 2 were given the *coup de grace* by naval guns.

Why the fire from the fleet was not promptly stopped is more perplexing than the question of how it started. Western Task Force reported that all ships had just been reminded of the coming mission and of the recognition signals to be shown. Probably the flashing amber belly-lights and red flares which would have readily been seen by a few isolated ships were obscured by the blaze of fireworks.

The failure of the IFF must be blamed largely on faulty operation by both the fleet and the troop carriers, neither of whom were experienced in its use. All planes were supposed to have their IFF turned on. Yet the air detachment handling air recognition and fighter control for the fleet reported that the formations in HUSKY 2 had "very erratic flight patterns—some showing IFF and some not."<sup>84</sup> On the other hand, Western Task Force had just installed its Mark III IFF equipment. Admittedly many of its sets were inoperative or untested and many of its operators

insufficiently trained. Finally, IFF itself appears to have been fallible, especially when saturated by great numbers of low-flying planes.<sup>85</sup>

At 0041 the first survivors of the debacle reached their Tunisian bases, and interrogation began. When the returns were in, it was found that the loss ratio in HUSKY 2 was an appalling 16 percent. Of 144 C-47's which set out, 23 failed to return, and 37 were badly damaged. That the naval and ground fire had increased rather than diminished as the mission progressed is indicated by the record of the 316th Troop Carrier Group. Flying last, it lost 12 planes and had 37 casualties. Six pilots of that group returned with their loads, convinced that to go on was suicide. On 24 July the casualties of the whole 52d Troop Carrier Wing were reported as 7 dead, 30 wounded, and 53 missing.<sup>86</sup> The legend of a navy which shot from the hip without distinguishing friend from foe spread widely and lingered long among the troop carrier units.<sup>87</sup>

On 12 July preparations were made to tow additional elements of the 82d Division to Sicily by glider. Gliders and planes were loaded and ready when a TWX from Force 141 informed the airborne and troop carrier units that in "view of unfortunate incident last night" all further reinforcement lifts were canceled.<sup>88</sup>

As might be expected, the jump of the 504th PCT was terribly disrupted. The first few sticks landed safely on and around the airfield, and most of the 313th Group managed to drop their men from formation fairly near the objective. For the most part the other groups dispersed before they reached Farello, and a great many pilots dropped their troops prematurely between Vittoria and the Acate on the territory of the 45th Division.<sup>89</sup>

The men of the 45th were new to combat, tense after a day of seesaw fighting, and unprepared for a paratroop drop in their area. Moreover, some of their personnel had not received any notification of the mission. Convinced by the noise of its own fire that it was being attacked, the 45th Division assumed that the paratroops were Germans and fired on them as they came down. To make matters worse, the paratroops did not know the password of the division, nor did the 45th know theirs. Each division had its own password, and that of the 45th had just been changed. The forces on the ground had not been familiarized with the paratroop uniform, and some assumed

that it was German. The result was a number of unnecessary shootings and skirmishes. Even the 1st Division, which should have known better since Farello was in its sector, fired on the descending troops and listed the 504th in a G-2 report as a German parachute regiment. A few smaller units may have had the excuse of ignorance, instructions having failed to reach them in time. Such apparently was the case with some antiaircraft batteries.

Over 400 of the paratroops in HUSKY 2 were casualties. Only 44 died in crashes, since only 6 planes were shot down before making their drop. Four were found dead in returning planes, and several were wounded while aboard the aircraft. Since some jumped despite wounds, it is hard to tell just how many were shot during or after their jump, but it was a considerable number.<sup>90</sup>

From a military point of view the tragedy lay, not in the casualties, but in the dispersal of a crack unit just when it was needed. On the morning of 12 July, General Ridgway could only report that elements of the 504th PCT were "dribbling in." At midnight on 13 July, 48 hours after HUSKY 2 and 4 days after HUSKY 1, he had on hand only 3,024 out of 5,307 men flown to Sicily in those two lifts.<sup>91</sup>

HUSKY 2 was a costly and demoralizing failure. Yet it seems reasonably certain that before being fired upon the mission was on the way to success. All groups appear to have been in formation and close enough to find the objective. Normal dispersion around the airport would have been a minor inconvenience, since the terrain was suitable and in friendly hands.

In this connection one myth should briefly be disposed of. According to this story, the German counterattacks of 11 July amounted to a recapture of the whole Farello area. Hence the fire which greeted the troop carriers was assumed to be enemy fire.<sup>92</sup> Such a notion may have led some pilots to jettison their troops prematurely or to return without dropping them. However, this notion was unfounded. Farello was within the Allied lines and General Ridgway and his staff were standing on the airfield when the drop was made.<sup>93</sup> The corridor did lie very close to the front and at least one plane which overran it was brought down by German machine gunners in the vicinity of Comiso. However, it was noted at the time that the heaviest fire came, not from the front but from Allied guns along the beaches to the left of the corridor. Re-

turning pilots remarked sardonically, "Evidently the safest place for us tonight while over Sicily would have been over enemy territory."<sup>94</sup> Some pilots reported sighting enemy aircraft. This is quite possible, but in the confusion they could have been mistaken. There is no reliable evidence of enemy air action against the troop carriers.<sup>95</sup>

Early reports that the ground and naval commands had not been notified of the mission and its route appear to have been true only in the case of a few small units. Control of antiaircraft by both naval and ground units was certainly very weak and could have been improved. However, after considering all aspects of the case, the Allied commanders found only two ways to ensure that in the future no nervous or ill-informed gunner could set off a barrage against an airborne mission. The first was to avoid all antiaircraft concentrations and particularly all convoys even more than was done in Sicily.<sup>96</sup> The other was not merely to notify friendly forces along the route of a mission but to forbid them absolutely to fire at any aircraft while the mission was in progress.<sup>97</sup>

For three months the notion that airborne reinforcement missions were inherently too dangerous to be worthwhile seemed on the verge of becoming doctrine. Then, as will be discussed in Chapter IV, a reinforcement mission flown at Salerno proved that such operations could succeed and pay high dividends.<sup>98</sup>

#### **LADBROKE, The Glider Mission Against Syracuse**

The 51st Troop Carrier Wing had as much trouble towing British gliders in LADBROKE as the 52d experienced with American paratroops in HUSKY. On the night of 9 July 109 C-47's of Troop Carrier Command, and 28 Albemarle and 7 Halifaxes of 38 Wing were ready to go. Waiting to be towed were 136 Waco gliders and 8 Horsas. The latter, because of their size, were to be towed by the four-engine Halifaxes, supplemented by one Albemarle. The glider pilots were drawn from the British glider pilot regiment, reinforced by 19 American glider pilots who had volunteered for the mission. The gliders were to carry the British airlanding brigade under Maj. Gen. G. F. Hopkinson. Their armament included seven jeeps, six 6-pounder guns and ten 3-inch mortars.<sup>99</sup> At 1842 the first aircraft of the Troop Carrier Command was hitched to its glider, rolled down the runway,

and headed for Sicily. They continued to take off from the six fields of the 51st Wing and 38 Wing, at less than one minute intervals in clouds of dust until 2020. Flags and walkie talkies were used to control the take-offs. The 60th Group lined up its aircraft on the runway four abreast, each with its glider behind it. They took off alternately in pairs. The 62d Group lined up its gliders on either side of the runway facing in at a 45° angle and moved its aircraft down the runway in two lines like conveyor belts to receive the gliders. This system, faster and more economical of space, was later generally used. Once in the air, the American planes lined up in formations of fours in echelon to the right with one-minute intervals between elements. The British flew individually, as was their custom at night.

Six Albemarle towing Wacos were unable to leave Tunisia; five of them aborted because their gliders were unsound or misloaded. Three other craft returned with glider trouble and took off again, two with substitute gliders. Every American field had two or more reserve gliders standing by. A reserve C-47 and glider were substituted for an American plane which lost its glider after starting. One American plane made a forced landing in Tunisia when a jeep in its glider shook loose.<sup>100</sup>

Each group swept in a wide circle while assembling, then headed north at 500 feet to rendezvous with the others over the Kuriate Islands. From there, 137 strong, they set out toward Malta 200 miles to the east. The C-47's flew below 250 feet and at about 120 miles an hour. The Albemarles were to fly at 350 feet and 125 miles an hour, the Halifaxes at 500 feet and 145 miles an hour. The course was straight and ran just south of the island of Linosa, which served as a useful checkpoint. The sun set as the lead planes sighted Malta, but the flashing beacon there was plainly visible to all but a few stragglers in the rear squadrons. A handful of fighters seen over Malta constituted the only escort observed during the trip. Fortunately no enemy fighters appeared. Rounding the southeast corner of Malta, the pilots flew 70 miles north-northeast to a point 5 miles off Cape Passero, the southeast tip of Sicily. Some sighted the Cape but many had to estimate their position. They then flew north for 18 miles before heading northeast about 2 miles offshore to the release zone.

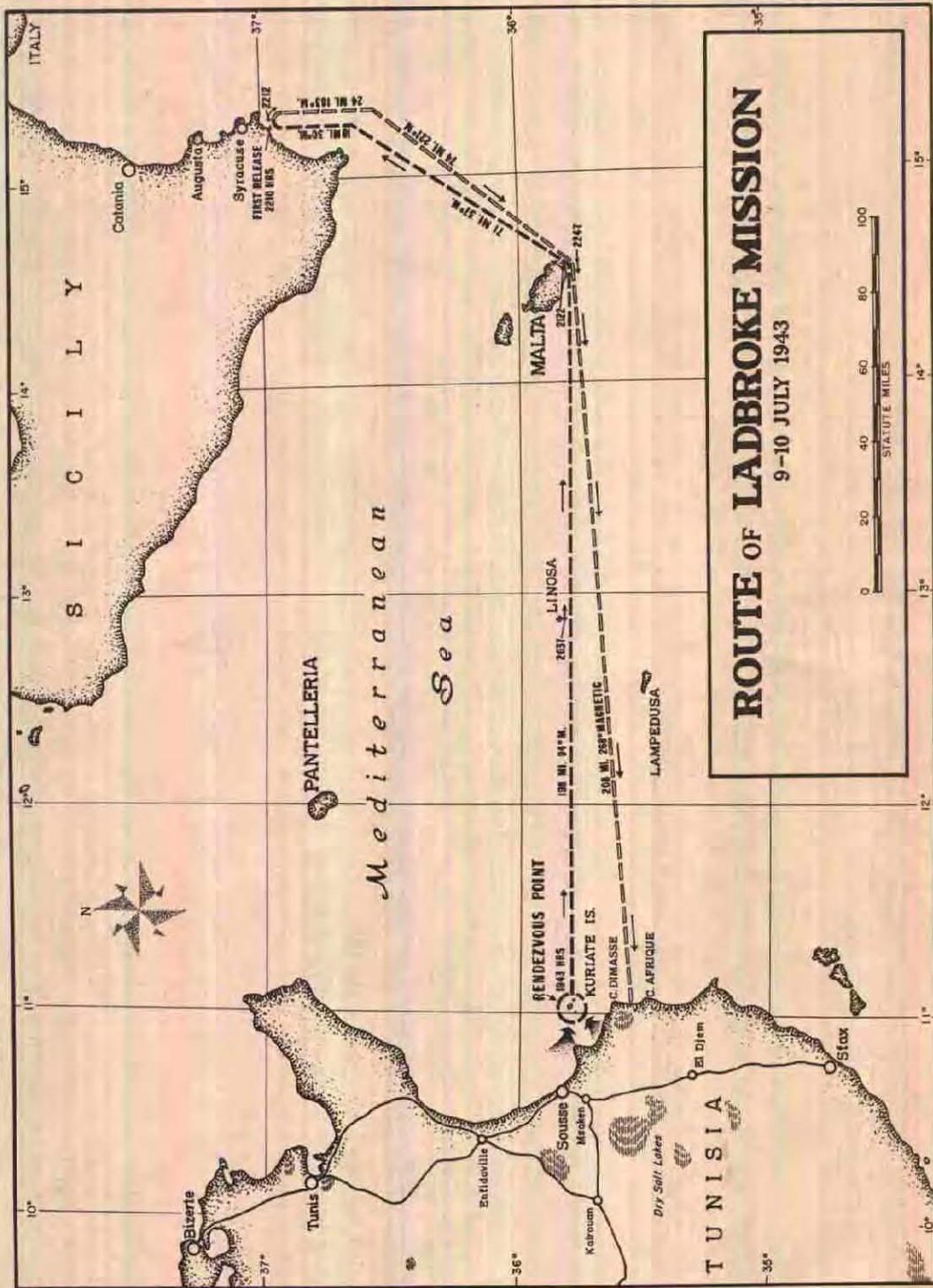
In spite of all the difficulties of their long, five-

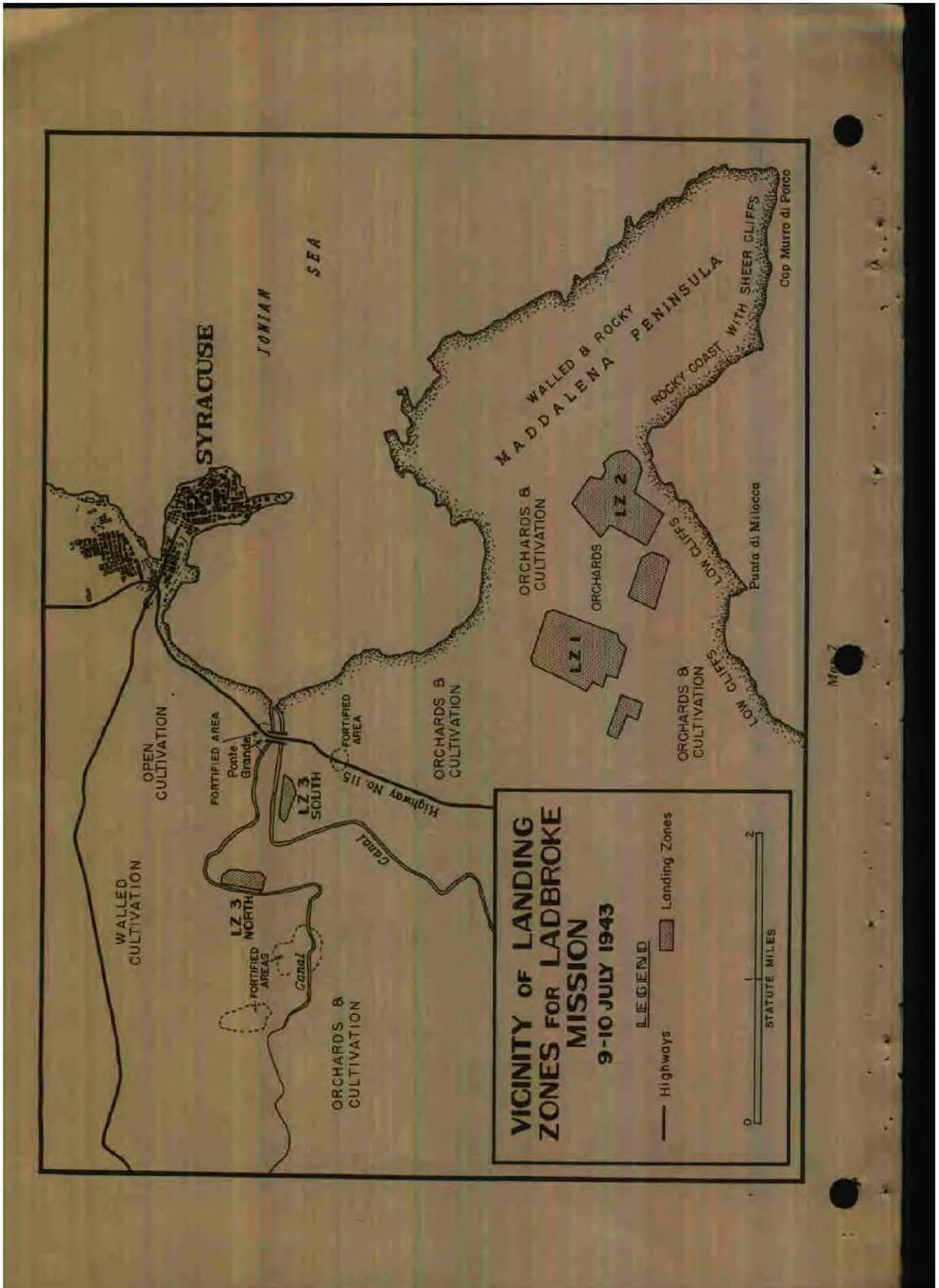
legged course the troop carriers brought over 90 percent of their force successfully to the shores of Sicily. Ordered to fly low, they flew so low that some planes were lashed by spray. The dying gale, blowing from the northwest gave planes and passengers a rough trip\*. In the darkness after passing Malta some planes straggled and some formations overran those ahead of them. The 28th Squadron was particularly badly jostled. At least 14 planes were blown well east of their course after leaving Malta. Nevertheless only two lost their way over the sea and turned back with their gliders. Two others later turned back unable to orient themselves after reaching Sicily. One Waco was accidentally released en route and a Horsa broke loose from its tow ship. Some stragglers mistook distant parts of the coast for their objective. Five gliders landed between Cape Passero and Avola, 15 miles south of their objective. About a half dozen more, mistakenly released in that area, came down in the water. One glider was released near Augusta, 15 miles north of Syracuse. The gliders accounted for above certainly were not released over Syracuse.<sup>101</sup>

So many gliders landed in the sea or vanished, probably at sea, with all hands that it is impossible to say exactly how many were released in the proper area. However, it is estimated that between 109 and 119 planes, towing a force of over 1,200 fighting men, released their gliders within what by daylight would have been full view of the landing zones and of Syracuse itself. Near as they were, not 1 in 15 of the men they carried were able to reach the objective that night.

Their goal was the Ponte Grande, a bridge a mile and a half southwest of Syracuse on the highway by which the British 5 Division was to approach the city. The Horsa gliders were to land between a quarter mile and a mile west of the bridge on LZ 3, two small strips of land on either side of the Mammaibica Canal. The Waco gliders were to land on two zones between two and three miles south of the bridge: LZ 2 consisted of two irregular pieces of land, amounting to about half a square mile altogether, located close to the shore; LZ 1, about a mile west of it and almost a mile inland was a rectangular area some 1,200 yards long and 900 yards wide plus a small ad-

\*For the record, the winds were high: 40 mph aloft and 15-20 mph on surface from 330-360°. (Diary, NAAFTCC A-3, 9 Jul 43).





jacent strip southwest of it. Both Dunn and Williams later stated that the zones had been made too small.

The bridge was less than half a mile west of the outer harbor of Syracuse, but the concentration of antiaircraft guns around that city had dictated an approach from the south, which in turn had largely determined the location of the Waco landing zones. The troop carrier formations were to take Cape Ognina as the initial point for their final run, and set their course a mile off its tip for the end of Cape Murro di Porco. Halfway between these capes and about 3,000 yards southeast of that part of the shore nearest to LZ's 1 and 2 the pilots were to give orders for the release of the gliders, turn to the right and head south, homeward bound.

Originally the Waco gliders towed by the 60th Group were to be released at an altitude of 1,500 feet for LZ 1 and those of the 62d Group at 1,100 feet for LZ 2. At the last minute these heights were both increased by 300 feet. Since the Waco was ordinarily able to glide 15 times its height at release, the gliders should have been able in both instances to fly about two miles further than would presumably be necessary. The Horsa gliders headed for LZ 3 were to be released at 3,500 feet.<sup>120</sup>

In the dim light of the low quarter moon the first seven planes made their run exactly on schedule undetected and undisturbed. Then the defenders awoke. Searchlights swept the sky, and from the beaches to the city antiaircraft batteries began to fire. Only two searchlights were near the landing area and the flak from the beaches was so light and scanty that no aircraft were seriously damaged. The wing commander later said there was no flak within several thousand yards of the glider release point.<sup>103</sup> However, the lights and flares dazzled the pilots and smoke of the firing, borne on the northwest wind, drifted over the shore and the release area. Confusion set in. Pilots found it increasingly difficult to judge their position or even to see the shore. Several found that if they turned and ran west, the land was silhouetted beneath the moon. Others had to swing around and repeat their runs. These planes flew through the formations behind them. Some pilots, anxious to allow for the wind, released Waco gliders as high as 3,000 feet, so that they passed through rather than under the stream of traffic. Several formations had overrun each other and released simultane-

ously. It seemed at times as though the air was full of planes and gliders coming from all directions.

In this melee teamwork between carrier pilot and glider pilot proved inadequate. After all, they had never rehearsed a release under anything like combat conditions. To add to their troubles, between 25 and 30 percent of the intercom sets, supposed to provide telephone connections between plane and glider, worked badly or not at all. The gliders were supposed to cast off on verbal or visual signals from the plane. Instead, about a dozen troop carrier crews released their gliders and at least half a dozen glider crews cut loose without a proper signal.

After releasing their gliders the troop carriers dropped their tow ropes, turned south, and headed for home at 160 miles an hour, a brisk cruising speed for the C-47. Most of them followed orders to keep above 6,000 feet until past Malta in case they met a convoy. Several planes did encounter convoys, but the ships, reassured by their height, did not fire. Orders were to pass at least five miles southeast of Malta in order to keep clear of the 52d Wing.

Malta blazed with searchlights, and its radio beacon was picked up on many compasses, although the signal had been changed from Y to O. Beyond Malta the troop carriers descended to 2,500 feet. Icing conditions, however, forced some to other levels. They then headed straight for Tunisia. The first plane of the 60th Group got home at 0015, and the first from the 62d Group came in at 0055. The quadrants on the homing beacons had been reversed in the final briefing, and one radio beam was reported to be "wandering and inaccurate." Four or five pilots were led astray, one landing as far away as Tripoli. However, before dawn every one of the 137 planes which had left Africa on LADBROKE mission had landed safely in friendly territory.<sup>104</sup>

Despite some misgivings, the carrier pilots' initial reports indicated that 95 percent of the gliders had been released at approximately the proper point. By 11 July the staff of 51st Wing had calculated that over 70 gliders had landed in the Syracuse area, and it clung to this estimate as late as 23 July. Finally Troop Carrier Command concluded that 58 gliders had landed in Sicily. Even this figure seems larger by four than the evidence warrants.<sup>105</sup>

In fact, at least 69 Waco gliders came down at sea. An average of three men per glider were drowned. Seven Wacos and three Horsas missing with all aboard probably shared their fate. Troop carrier pilots and airborne troops agreed that almost all releases were made at or above the prescribed height, but the occupants of 56 of the ditched gliders testified with bitterness that they had been released more than 3,000 yards from the shore.\* Another had been brought down on the water by flak, and one reportedly had had to dodge an enemy fighter.

The attitude of the British troops was symbolized by their commander, General Hopkinson. On the morning of the 9th he had commended the 51st Wing in glowing terms for its efficiency and cooperation. When picked up that night from the water-logged wreckage of his glider, he was cursing them with every breath he could muster. His men did not hesitate to accuse the troop carriers of flinching away from enemy antiaircraft fire, and the charge was later to bring about brawls in many an English tavern between troop carrier men and British airborne. Troop carrier pilots themselves accused some element leaders of keeping too far offshore. However, the influence of fear, perceptible in accounts of HUSKY 2 and FUSTIAN, is hard to establish from the reports of LADBROKE. Furthermore, the first seven planes, releasing without any enemy action to disturb them, had only two of their gliders reach land. This was below the average for the mission as a whole. Thus fear of antiaircraft seems an unsatisfactory explanation for the ditching of the gliders.<sup>106</sup>

Some pilots may have been rattled by their first exposure to flak. Others were tense and over-eager and jumped the gun like a sprinter in his first track meet. Most misjudged their position in the darkness and confusion. Glider operations with release over water were known to be very difficult and doubly difficult in darkness. The makers of airborne doctrine in the United States and in England would have held that a mission involving both features was unsound, and so it proved.<sup>107</sup>

However, even if all the pilots had had nerves of steel and eyes like owls, many would have failed through an error in the planning. The

heights prescribed for the gliders were not sufficient to enable them to reach their landing zones against the strong wind. The Waco pilots presumably did not minimize their achievements, but few claimed to have glided more than two and a half miles, and their average free flight seems to have been barely two miles. On that basis, if orders for the release had been followed exactly, a large percentage of the Wacos would not have reached the LZ's.

Only 49 Wacos and 5 Horsas are known to have landed on Sicilian soil. All but one of the Horsas were released at an altitude of more than 3,000 feet, and that one was reported released over the coast. About 25 of the successful Wacos appear to have been released within a mile of the shore, and 3 others which reached land had been given added range by release at altitudes over 1,000 feet higher than had been prescribed. Only nine of the successful Wacos were reported released at approximately the height and distance prescribed in their orders.

The conclusion to be drawn from these facts was clearly seen and frankly stated by both General Williams and General Dunn. The fault lay in the planning and particularly in the release point set for the Waco gliders. Had that point been over the shore, few could have mistaken it. Had it been 1,000 feet higher, the gliders would have had sufficient range to compensate for the wind and for some misjudgment by the troop carriers. As it was, the glider pilots had to make the best of a bad situation.<sup>108</sup>

Once released, the glider pilots could not find their way. Over half of them could not see the shore. Scarcely any could pick out inland landmarks by which to recognize their landing zones. Of 49 gliders which landed within 10 miles of their goal, only 2 Wacos landed on LZ 1. Only one came down on LZ 2, and it hit a tree. One Horsa made a perfect landing on the Horsa landing zone, LZ 3.

Twenty gliders landed within a mile of the Waco landing zones and two Horsas came down within a mile of LZ 3. However, with gliders a miss is often as bad as a mile. The Waco could skid to a stop within 150 yards, but any obstacle in the landing area or in the last hundred yards of the approach generally meant a crash. In such cases the hinged cargo door in the nose of the glider

\*The lack of visibility makes any single estimate of distance unreliable, but the total is significant.

usually jammed shut. The terrain around the landing zones was checkered with orchards and vineyards, and, especially to the east, the fields were small and bounded by the stone walls characteristic of southern Italy. Seven Wacos hit trees, and six Wacos and two Horsas crashed into walls. Many others had rough landings. The most costly loss was that of a Horsa which flew head on into the canal bank almost on the edge of its landing zone and only 400 yards from the bridge. Casualties in the other accidents were surprisingly low, but most of the heavy equipment was damaged or jammed within the gliders.

Enemy resistance played its part. One of the Horsas which struck a wall had been hard hit by enemy antiaircraft and landed with its ammunition exploding. Three gliders which landed near the shore were attacked on landing by enemy troops.<sup>109</sup>

The troops aboard the one Horsa which landed on LZ 3 removed their gun from the glider and moved immediately against the Ponte Grande, which was only a few hundred yards away. They took the bridge, removed the demolition charges, and threw them into the river. Reinforcements arrived shortly from another Horsa about a half mile to the south. By morning 8 officers and 65 enlisted men were holding the bridge. They were joined about 0730 by a small group, including one American glider pilot, who had fought their way northward from the vicinity of the Waco landing zones. At 0800 enemy counterattacks began and continued into the afternoon. By 1530 hours the airborne troops had been pushed east along the canal bank away from the bridge. Severe mortar and artillery fire had left only 4 officers and 15 enlisted men unwounded. Their ammunition was running low, and they were surrounded by about a battalion of enemy soldiers. Under these circumstances, they surrendered.

The foe, however, had no time to blow up the bridge. Before he could plant fresh explosives, patrols of the British 5 Division arrived, drove the enemy from the bridge and rescued the captive survivors of the airlanding brigade.

General Montgomery later stated that the taking of the Ponte Grande saved him seven days. In addition the local actions which occurred around many widely scattered gliders undoubtedly damaged enemy communications and morale. What-

ever might be said to its credit, LADBROKE mission was costly and inefficient. The casualties were reckoned a month later at 605 officers and men, of whom 326 were missing, probably drowned. In return for that sacrifice, about 5 percent of the airborne troops had reached their objective and gone into action at the Ponte Grande.<sup>110</sup>

#### **FUSTIAN, The Bid for Catania**

On 10 July, the day after LADBROKE, the 51st Troop Carrier Wing began briefing for GLUTTON, a mission in which the British 2 Parachute Brigade was to jump near a stone bridge three miles west of Augusta, capture the bridge, and hold it for the passage of the Eighth Army. The pilots were ready and the troops were at the field when at 1830 hours General Williams decided to postpone the project for 24 hours.

Next day at 1630 orders came to the airfields to proceed with GLUTTON. At 1700 the Twelfth Air Force called the mission off. The Eighth Army was rapidly nearing Augusta and needed no help. This was just as well, for the drop zone designated for GLUTTON was later found to be an area of rocks and gorges.<sup>111</sup>

On 12 July the 51st Wing began briefing for FUSTIAN, a mission designed to take the Prima-sole bridge over the Simeto River about five miles south of the city of Catania. Again came the disappointment of a postponement. The Eighth Army was slowing down and was not within striking distance. Next day, however, Montgomery decided on an all-out effort to break through into the Catania plain before the Germans could consolidate their defenses. Swift passage over the Simeto was essential to his plan, and at 1630 on 13 July the troop carriers were alerted for FUSTIAN. Final briefing took place at 1745.<sup>112</sup>

FUSTIAN was to be a paratroop mission reinforced by glider-borne artillery with 135 planes providing the lift. The 51st Troop Carrier Wing had assigned 105 C-47's, 51 each from the 60th and 62d Groups and 3 from the 64th Group. These, reinforced by 11 Albemarle of 38 Wing, were to carry 1,856 troops of the British 1 Parachute Brigade with some engineer and medical personnel attached. Following them would be 8 Waco gliders and 11 Horsas, towed by 12 Albe-

maries and 7 Halifaxes of 38 Wing.\* Aboard the gliders were 38 pilots, 77 artillerymen, 10 six-pounder guns, and 18 vehicles.<sup>113</sup>

The take-off of the 62d Group from fields C and D began about 1920, 10 minutes ahead of schedule; the 60th Group began taking off from fields A and B half an hour later. In both cases it took about 45 minutes to get the group in the air. Not until after 2200 did 38 Wing begin towing its gliders from fields E and F. This timing was intended to give the paratroops about two hours to secure the landing area before the relatively vulnerable gliders arrived. While contrary to the German practice of sending the gliders ahead for a *coup de main*, this was in full accordance with Allied airborne doctrine.

One Halifax had to be replaced at the last minute by an Albemarle. One C-47 returned immediately with engine trouble and was replaced by a substitute. Take-off accidents and a case of faulty controls prevented two Wacos and a Horsa glider from leaving Africa. One C-47 and an Albemarle carrying paratroops turned back with engine trouble before Malta was reached.<sup>114</sup>

The planes assembled over Tunisia at under 1,000 feet, headed out to sea through the corridor between Cape Afrique and Cape Dimasse, flew north to the Kuriate Islands, the initial point on their route, and set off for Malta over the same course flown in LADBROKE. Their cruising altitude, however, was 500 feet. They were organized into flights of from 2 to 11 planes, but the basic formation was elements of 2 in echelon to the right, spaced at 30 second intervals. This was a convenient formation, but not one likely to achieve a high degree of concentration or speed in dropping paratroops. The C-47's flew at 140 miles an hour, their standard speed. Such Albemarles as were towing gliders cruised at 125, the Halifaxes at 145 miles an hour. Fighter cover over Africa was furnished by the 1st Air Defense Wing.

The weather as had been predicted was clear and calm. The sun set before Malta was reached, but a half moon shone brightly through a slight

haze making navigation easier than in LADBROKE.

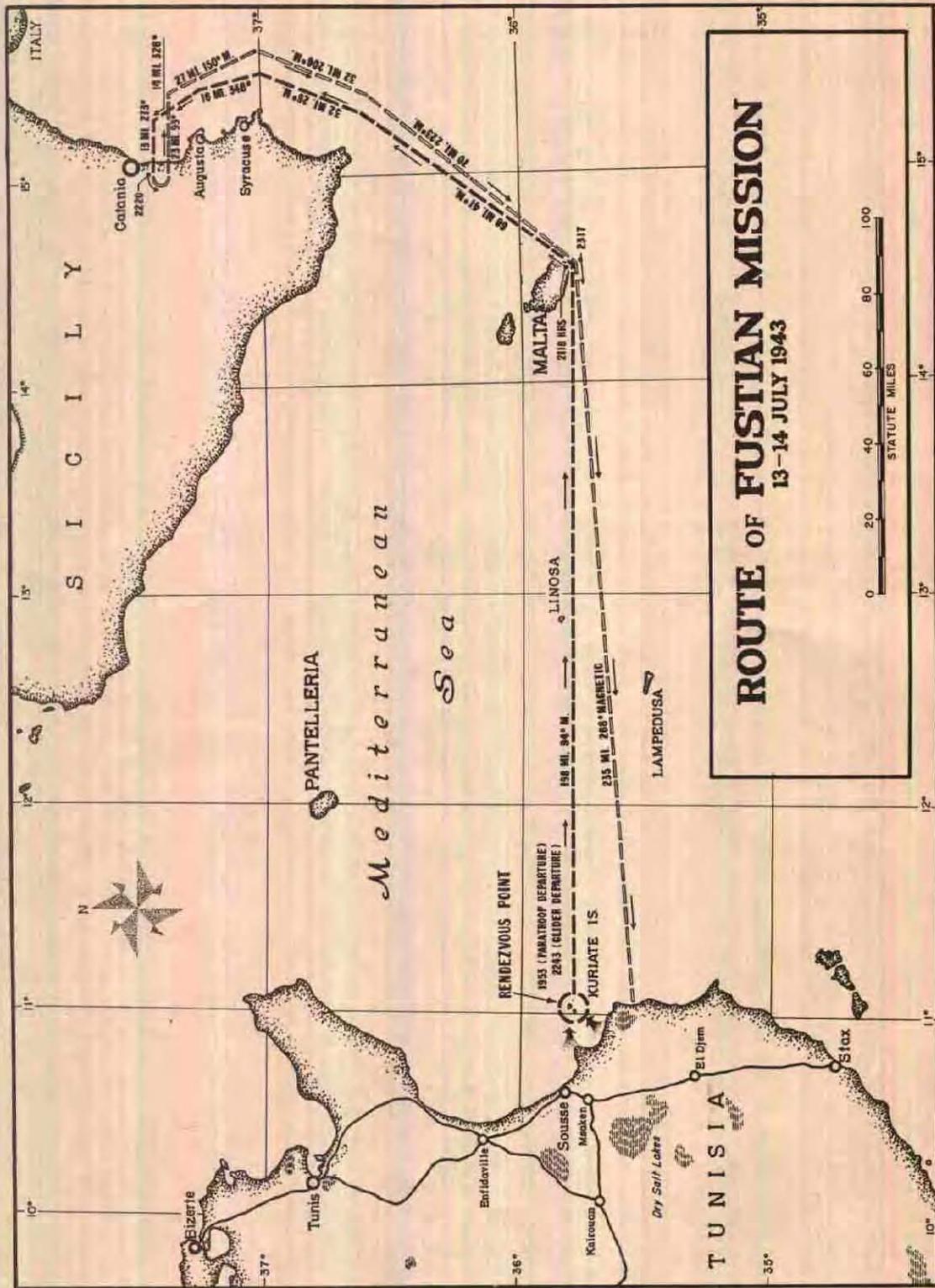
After rounding Malta, five miles to the southeast of Delimara Point, the troop carriers set out on a somewhat complex course designed to keep them 10 miles off the coast of Sicily until they were opposite the mouth of the Simeto River. From Malta it ran "thence 40° for 68 miles, thence 26° for 32 miles, thence 348° for 16 miles, thence 326° for 14 miles, thence 273° for 13 miles to the DZ area."<sup>115</sup> This course with its five over-water turns to be made by moonlight was designed to clear a five-mile danger zone set up around the invasion coast of Sicily up to and including Syracuse to meet naval requirements. Within this area, convoys would be massed and low-flying planes would be fair game. The British naval commander had been notified of the route and schedule for FUSTIAN and had approved them. The pilots had been briefed to keep at least six miles offshore until they approached their objective.

Somehow, however, the precautions taken to avoid the convoys went awry. The troop carriers found their route was full of ships and far from safe. One convoy bristling with barrage balloons was seen between Linosa and Malta. Another, sighted north of Malta, fired on three Albemarles which were at the rear of the column. This is the only warrant for the troop carrier claim that they were fired upon from the time they left Malta.

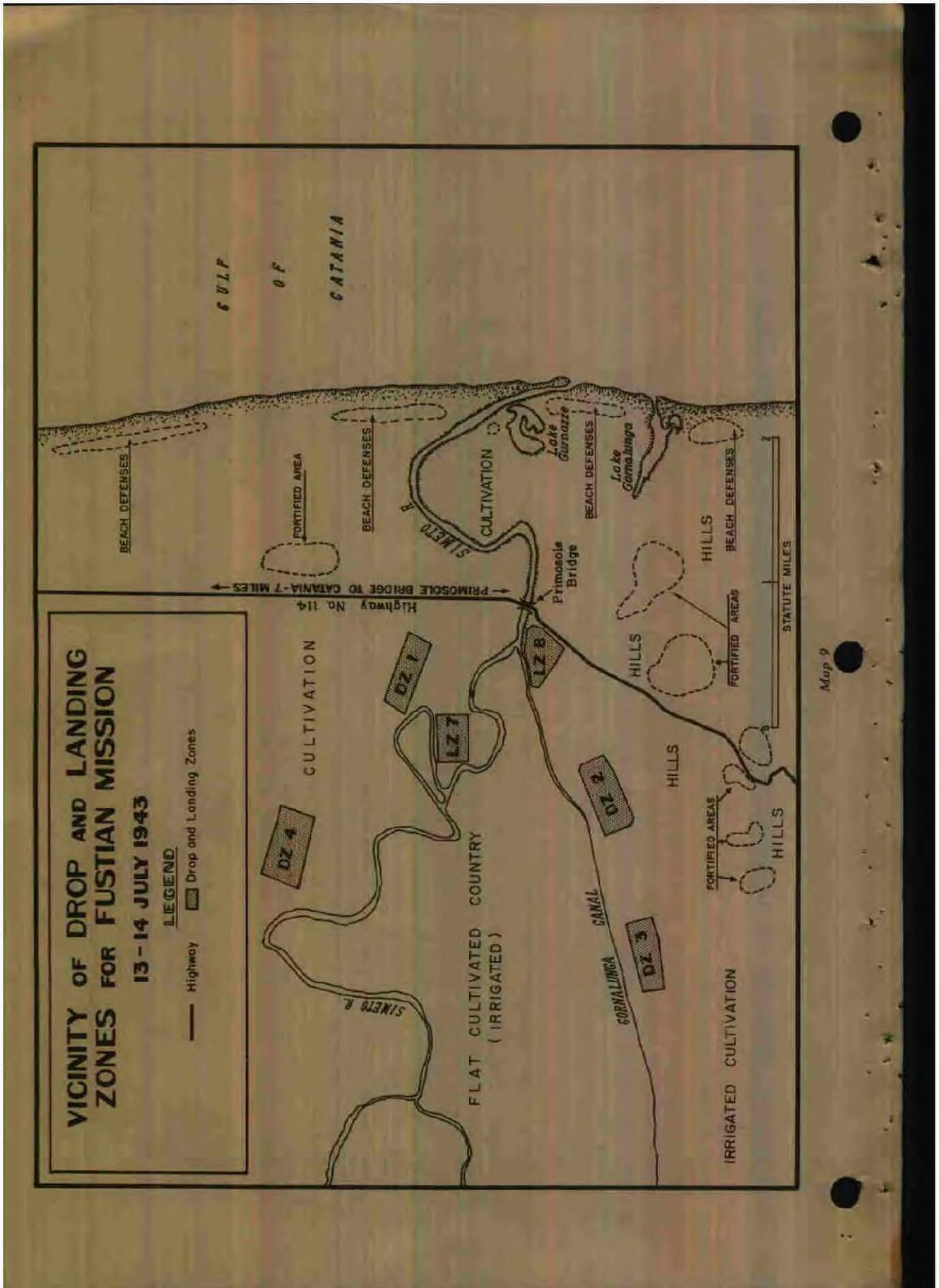
Real trouble began as the formations approached Cape Passero. Over the 40 miles where the troop carrier route bordered the naval zone, they were fired at again and again by several concentrations of shipping. Reports indicate that more than half the planes were exposed to this fire. The navy was not entirely to blame. At least 33 aircraft had strayed over or close to the danger line. Also, near the coast between Syracuse and Catania some antiaircraft activity which was blamed on the Royal Navy may have come from Axis shipping or coastal batteries. About 14 other troop carrier pilots who reported being fired on at points between five and eight miles offshore might have mistaken their location. However, there is ample testimony that about 30 planes were fired on by Allied ships at points between 8 and 23 miles offshore.<sup>116</sup>

Shortly before this mishap the convoys had

\*Fustian had grown from an 83-plane mission with no glider commitment on 30 June to one of 124 planes and 11 gliders on 7 July. Since then, partly because of the lack of losses in LADBROKE, it had been expanded to the size given above. (NAAFCC Report of Sicilian Campaign, pp. 27, 38a, 91). Both AAF and RAF historians have erroneously concluded that the number given in the orders on 7 July corresponded to the number of aircraft actually dispatched. (AAF in WW II, II, 454; Airborne Forces, p. 93).



Map 8



been alerted against an attack by Axis torpedo planes. While the destroyers had been notified of FUSTIAN, the transports and cargo ships had not. They mistook the cargo racks of the C-47's for torpedoes, and some, contrary to instructions, opened fire on their own initiative. This fire convinced others that an air attack was under way, and the action became general. Some ships eventually recognized the planes as friendly. Others ignored or failed to see recognition lights and flares. Why IFF was not more effective in preventing the mishap is, as in HUSKY 2, by no means clear.

Only two aircraft were shot down by the convoys. However, nine were forced to turn back by injury to planes or pilots. Two of the nine had collided while taking evasive action, and another which turned back with its engine afire may or may not have been hit. About six more gave up and went home without appreciable damage. Misunderstanding may have played a part, since five pilots asserted that they returned on orders from the squadron commander. The crew of one plane admitted that they were upset by reports of the disaster in HUSKY 2.

The pilots who pushed on to the Sicilian coast ran into what seemed to them a wall of anti-aircraft fire. The flak was concentrated in a barrage along the coast. Behind it near the drop zones was machine-gun fire, intense in places, but on the whole not more than might have been expected. The combination, however, was a disconcertingly serious threat to the unarmed, unarmored, inflammable transports. Nine planes in the paratroop echelon were shot down. Fortunately, all had made at least a partial drop of their troops, and four of them, including an Albemarle, were able to limp out to sea for successful emergency landings on the water. Three British planes in the glider echelon were reported missing, and were probably victims of enemy fire. In all, 14 planes, about 10 percent of the initial force, were shot down in FUSTIAN.

Antiaircraft from convoys and enemy combined damaged 34 planes; one other was damaged by a barrage balloon. Three of the damaged craft were irreparable; all but one or two of the rest were made operational within two days. It is noteworthy that although the 62d Group, which flew first, was not hard hit, the 60th, which followed,

lost 9 aircraft, had 23 damaged, and had 30 casualties. The combined casualties of the 51st Wing and the 38 Wing as reported about 2 weeks after the mission included 1 known dead, 14 wounded and 35 men missing.<sup>117</sup>

A large number of pilots who had lost formation circled up and down the coast looking for a way through the flak. Ten of them turned back with their troops and headed for Africa, raising to 25 the total of complete planeloads brought back after passing Malta. The British paratroops reported that many of these unsuccessful pilots had ranged about the Catania area until their gas ran low, some seeking a way through the flak, others searching in vain for check-points obscured by smoke and flame.

Nine out of ten of the pilots did fly through the barrage, some so low that they hit trees and haystacks, while others took violent evasive action. The narrative of a jumpmaster on one of the missing planes vividly shows what it was like. After circling twice in search of an opening through the barrage, the plane was hit and went into a dive. Then:

The crew chief started to get out a rubber dingy. We turned again and Major Curtis shouted back, "This time we will go in no matter what happens." We went over the coast low, about 100 feet and fast. I didn't know the aircraft would go so fast. We seemed to be rocking. There was a great deal of anti-aircraft and also small caliber fire. Two searchlights caught us and held us all the way until we jumped. Major Curtis climbed to 4 or 500 feet and throttled back and gave us a nice jump. I didn't see him again.<sup>118</sup>

The principal landmarks on the way to the drop zones were the Simeto River, a marshy lake south of the river mouth, the Primasole bridge, which was about three miles inland, and the Gornalunga canal, which entered the Simeto on its south side a quarter of a mile above the bridge. In the flat, heavily ditched fields near the river four rectangles, each about 1,000 yards long from east to west and 300 or 400 yards wide from north to south, had been selected as drop zones. DZ 1 lay north of a bend in the river about a mile northwest of the Primasole. DZ 2 and DZ 3, which were respectively one and a half and two and a half miles west of the bridge, lay on the south side of the canal. DZ 4 was located at a crossroads north of the river and two and a half miles northwest of

the bridge. It is doubtful whether anything was done to mark the drop zones.\*

Of 87 pilots who went through the flak to drop paratroops, at least 66 were convinced that they had found their drop zone and dropped their troops on or near it. Actually only 39 planeloads plus individuals from 3 other planes came down within about a mile of the drop zones. Another 22 pilots dropped men within about 5 miles of the zones. All but 4 of the rest deposited their troops within 10 or 11 miles of the bridge. The other 4 sticks came down on the slopes of Mt. Etna, some 20 miles away.<sup>119</sup>

This dispersion was the result of enemy fire rather than of any particular difficulty in the drop zones. Some planes had wandered back and forth as far north as Messina and as far south as Malta in their efforts to avoid the flak. They had run in over the coast at all sorts of points from Augusta to Etna. Naturally, their pilots found it hard to get their bearings. Many others lost sight of their landmarks in the turmoil over the objective. Some dropped too soon or overshot their goal. It must be remembered that most of the pilots after relatively little practice were making their first drop of paratroops under combat conditions. It should also be remembered that no Norden bombsight could be used to release the troops on their target. They jumped one by one out the door of the plane and floated to earth at speeds and angles which could not be exactly predicted.

Not all the drops were good ones. Two soldiers were killed and 13 received major injuries in landing. The jump had been set at 500 feet, a reasonable height, but at least 5 planes dropped their troops from less than half that altitude causing one death and many of the injuries. Seventeen planes dropped only a portion of their men. Only three of these incomplete drops were caused by a refusal to jump. In most cases the troops had been tossed in tangled heaps by antiaircraft explosions or evasive action. The confusion may have been accentuated by overloading. At least 3

planes with incomplete jumps were carrying 18 men instead of the 16 considered optimum for the C-47. Four planes were hit by antiaircraft fire while the men were jumping. In one plane with both engines blazing the pilot was last seen silhouetted in the doorway shoving out wounded and tangled paratroops.

After dropping their troops the planes turned south, made a 180° turn, and headed back at 160 miles an hour on a route roughly parallel to that flown on the way out. A few were again fired on by the convoys, but once south of Sicily their return was uneventful.

Paratroop operations in FUSTIAN were supposed to begin with a rush at the Primasole bridge from both ends to take it before it could be blown up. For this purpose seven sticks of paratroops were to jump on DZ 1, north of the river, and two on DZ 2, south of it, at 2220, some 20 minutes before the next paratroops were scheduled to arrive. Of these troops just one stick was accurately dropped about 10 minutes late on DZ 1. The next flights to those zones succeeded in putting four or five plane loads on DZ 1 and three on DZ 2. A few men were added by later flights or marched in after dropping a mile or so away.† Much equipment had not been dropped, and what was dropped was so difficult to locate that less than half of it was recovered. Fortunately, the enemy were concentrated at the bridge and made no assault on the drop zones while the British assembled and rearmed themselves.

About 0100 the paratroop commander, Brig. Gen. G. W. Lathbury, having organized a force of between 75 and 100 men on DZ 2, ordered an advance on the bridge. On arrival, they found that a body of some 50 paratroops from DZ 1 had already fought their way onto the north end of the structure. In the confused battle which followed, the half-hearted Italians at the bridge were unexpectedly reinforced by German parachutists of the Goering Division who had been dropped some hours earlier to set up defenses on the Augusta-Catania road. Nevertheless, by about 0430 on 14 July the British had taken the Primasole bridge.

Meanwhile, 10 successive planes of the 7th Troop Carrier Squadron had placed their sticks on and around DZ 3 between 2215 and 2245, an

\*One semi-official British author states that use of lights on the drop zones was discussed but was discarded at the last moment in favor of the Rebecca-Eureka beacon, which in turn was not used because the officer who was to operate it was killed. (Saunders, *The Red Beret*, p. 128). Rebecca-Eureka sets had been sent from England to North Africa on high priority for the airborne missions, but the fact appears to be that the equipment went unused because it arrived too late to train personnel or fit it into the plans. (*Airborne Forces*, p. 278; Minutes of Mtg Held at Norfolk House, 10 Aug 43 to Discuss Future Policy Relating to the Employment of Airborne Forces.)

†Curiously enough, several planes in the later flights appear to have been as much as half an hour ahead of schedule. Possibly some elements had cut across to Sicily without going around Malta.

achievement almost unparalleled in the Sicilian operations.\* Within a few minutes three sticks from later flights had also landed on that drop zone. However, all the troops on DZ 3 belonged to 2 Battalion. This had the mission of taking the dominating heights which rose about two miles south of the bridge. They therefore marched south without playing any part in the fight at the bridge itself. Despite an unfortunate clash with some of their own men who had dropped nearer the objective, they took a strong position on the hills and by morning had established a defensive perimeter.

The gliders were to arrive about 0100, at which time the situation around the bridge was expected to be well in hand. In fact, the battle for the bridge had hardly begun at that hour, and some of the gliders had to unload under fire. The Horsas were to be released over the bridge to land on LZ 8, a triangle about 500 yards long with the bridge at its apex, the river and the canal on its north side and the highway on its east side. The Wacos, released over an ox-bow bend in the river a mile west of the bridge, were to land on LZ 7, a rectangle 600 yards long on the north bank of the river within the bend.†

Of the 16 gliders which left Africa, one Horsa was accidentally released over the sea. Four other gliders were missing after the engagement and had probably been shot down. Three made disastrous crash landings, and four were neutralized by landing among strong enemy defenses several miles away.

Only four gliders, all Horsas, played a significant part in the action. One landed on LZ 8, one on the highway beside it, and one skidded into a field south of the canal half a mile west of that landing zone. Though one jeep stuck in its glider, the other two were sufficient to haul their three six-pounder guns into position around the bridge before dawn. The occupants of another Horsa, which landed seven miles to the south, drove up to the bridge with their gun next day.

By morning about 250 paratroops had gathered at the bridge with two mortars and the three

glider-borne antitank guns. The day began with an ineffective strafing by German planes. Sporadic attacks were made in the morning by elements of the Goering Division, some of which were south of the river.

About noon substantial German forces sent by truck from Catania began attacks which drove the British from the north end of the bridge. By 1800 the Germans were using an 88-mm. gun to blast the paratroops from their pillboxes and foxholes at the south end. The defenders were almost out of ammunition, an occupational hazard for paratroops, and were in serious danger of being overrun. Fortunately, the Germans had not yet brought up tanks against them and had not been able to get more troops south of the river. The Eighth Army had not yet arrived, and communication with it was possible only at long intervals over one damaged radio set. Lathbury and his men therefore abandoned the bridge and fell back to join the 2 Battalion on the hills to the south.

Although savagely attacked by the German 4th Parachute Regiment, which was supported by artillery, the 2 Battalion had stood firm. Fire from a cruiser which put its six-inch guns at their service had helped them hold their position. Thus the navy which had so nearly wrecked FUSTIAN played a part in saving it. Just before dark Eighth Army tanks appeared in the distance, and the Germans fell back.

Next day the paratroops with somewhat limited reinforcements from the advance-guard of Eighth Army counterattacked the Primasole, but the Germans had dug in at the bridge and were able to throw them back. A heavier attack at dawn on 16 July retook the Primasole almost intact. As at the Ponte Grande the Germans had not found time to dispose of it, although they had managed to do superficial damage with an antitank mine. The brigade had lost 27 killed and 78 wounded. On 12 August, 314 of its personnel were still missing.<sup>120</sup>

Fourteen planes and 500 men would have been a small price to pay for breaching the German defenses. Instead, the Germans succeeded in establishing a line in front of Catania, and they held it until flanked early in August by Allied operations in the interior of Sicily. Thus, although the British claimed that by saving the Primasole, FUSTIAN had enabled them to get across the Simeto a week sooner than they otherwise could have done,<sup>121</sup>

\*The 7th Squadron had put only one glider ashore in LAD-BROKE, the worst record of any unit in that operation.

†Of ten gliders whose height at release was reported, six were released at between 500 and 800 feet, and one pilot who released a glider as high as 1,500 feet felt it necessary to justify himself. Thus the statement (NAAFTCC, Report of Sicilian Campaign, p. 93) that Wacos were to drop at between 1,400 and 1,800 feet and Horsas from 3,500 feet may be regarded as an error resulting from confusion of FUSTIAN with LAD-BROKE.

the effort really bore very little fruit. If the mission had been completely successful and the paratroops had held the bridge, Eighth Army could have crossed the river on the 15th instead of on the 16th. Whether their weary and attenuated columns could have brought enough strength to bear at that time to achieve a breakthrough seems anybody's guess.

One can conclude in retrospect that the Prima-sole bridge was a worthy objective, and that the airborne force sent against it was potentially sufficient to take and hold it, even with the unforeseen intervention of the German paratroops. The drop zones were recognizable and well-located, near enough to the objective for attack, and far enough to give a fair degree of safety during dropping and assembly. The route was complicated and was longer than was then considered desirable, but these handicaps were dictated by military necessity and would not by themselves have proved serious. The one step which in view of the events in HUSKY 2 should have been taken but was neglected was to ensure that Allied shipping would not fire on the mission.

#### Lessons Learned in Sicily

Viewing the Sicilian airborne missions as a whole,\* the most striking lesson, and the one which first produced results, seems to be the demonstrated need for beacons and signals set up by pathfinder units to guide a mission to its objective. To qualify this it should be noted that most of the last three groups in HUSKY 1 had strayed so far that it is doubtful whether any beacons used in the course of the war could have brought them to the drop area. Evident, too, was the necessity of simple routes, sound navigation, and close-formation flying, especially at night. Indeed, a meeting of British experts held that the "major lesson" of all the missions was the importance of thorough training in night flying.<sup>122</sup>

LADBROKE taught the folly of releasing gliders in the dark over water. It showed the advis-

\*On four occasions one or two planes of 38 Wing dropped British troops to destroy enemy communications. These ventures were called the CHESTNUT missions.

ability of having large landing zones and pointed up the weaknesses of the Waco glider—an inability to carry guns with prime movers and a tendency to jam the cargo door in the nose during landing.

HUSKY 2 and FUSTIAN painfully proved the need to avoid any concentration of friendly antiaircraft or else to secure absolute control of its fire. No reliance could be placed on identification. A troop carrier formation at night could be destroyed before it was recognized. FUSTIAN further demonstrated the effectiveness of even moderate enemy fire in destroying and dispersing the troop carriers.

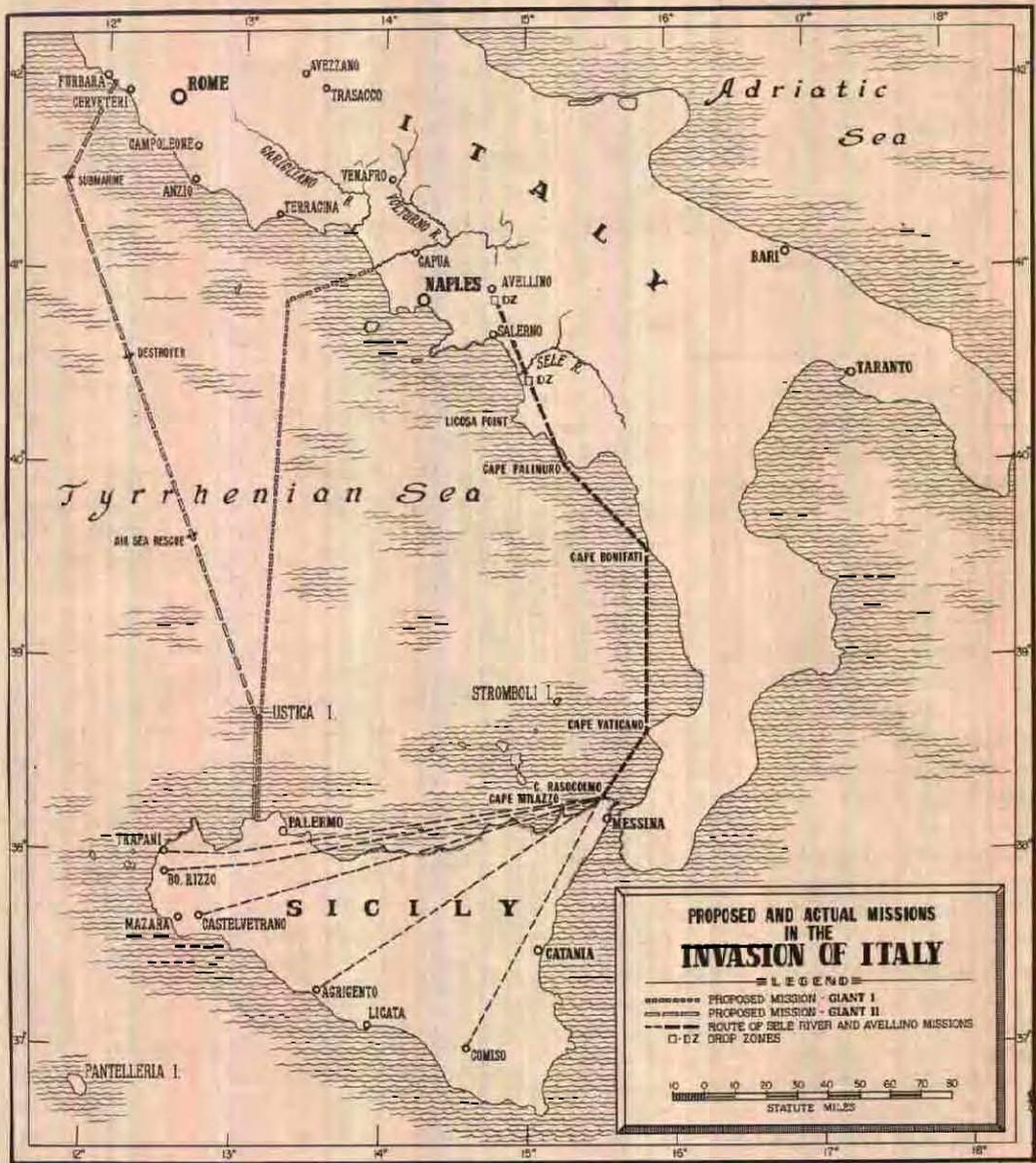
Dispersal under fire might be reduced by strict prohibition of evasive action, swerving off course, or return without dropping troops. Still, without realistic training, combat experiences,† and some protection against enemy bullets and leaky gas tanks, transport pilots could not be expected to behave like bomber pilots. As for losses, General Spaatz felt that only surprise plus avoidance of organized battle positions could keep them from being excessive.<sup>123</sup>

To a large segment of American military opinion, the Sicilian operations seemed to demonstrate the costly futility of large airborne operations. Secretary of War Stimson leaned to that view, and Lt. Gen. Lesley J. McNair, Commanding General of the Army Ground Forces, later wrote:

After the airborne operations in Africa and Sicily, my staff and I had become convinced of the impracticability of handling large airborne units. I was prepared to recommend to the War Department that airborne divisions be abandoned in our scheme of organization and that the airborne effort be restricted to parachute units of battalion size or smaller.<sup>124</sup>

No such thoughts influenced General Ridgway or General Williams, and during the following months they pleaded for a chance to throw their whole commands into a concentrated airborne assault on the mainland of Italy.

†In August 1943 Winston Churchill suggested the use of ex-fighter pilots in airborne missions. The idea was turned down on the grounds that fighter pilots were not suited to the task by temperament or training (objections which might not apply to former bomber pilots).



Map 10

## CHAPTER IV

## Operations in Italy

## Plans for Invasion

**D**URING THE SPRING and early summer of 1943 plans for the invasion of Italy, although energetically discussed by the Allies, remained tentative. Before August the end of the Sicilian campaign was in sight, and the Fascist regime in Italy was collapsing. Mussolini was overthrown on 25 July by a *coup d'etat*, and the king designated Marshal Badoglio to succeed him as Prime Minister. By 27 July this situation had encouraged Allied Force to supplement previous plans for an invasion of Calabria, the toe of the Italian boot, with proposals for an amphibious attack in the Naples area. The coastal plain around Salerno about 30 miles southeast of Naples was soon selected as the best spot for this operation, which was christened AVALANCHE. A meeting of the chief Allied commanders at Tunis on 10 August expressed "general agreement that every effort must be made to mount AVALANCHE."<sup>1</sup>

A bridgehead at Salerno could be flanked by German troops moving south through passes at the base of the Sorrento Peninsula. Fifth Army, which was responsible for the execution of AVALANCHE, at first proposed to take the passes by landing a glider-borne force near the towns of Sarno and Nocera on the night before the invasion. The project was communicated to the 82d Division on 1 August, and all available gliders, 318 in number, were earmarked for this operation.

On careful examination the Nocera-Sarno mission proved unsatisfactory. Mountainous terrain made the area difficult for paratroops and prohibitive for glider landings. Also the tactical value of the mission was limited, since it left open the important routes leading south to Salerno

through Avellino.\* Consequently, the project was pigeonholed on 12 August and, although considered later as an auxiliary operation, was never carried out.

It was replaced by a daring enterprise conceived by Fifth Army. This mission, later named GIANT I, was to cut the main highway across the Volturno River north of Naples by dropping two paratroop combat teams of the 82d Division, reinforced by glider-borne artillery, near Capua on the night of D minus 1. On 18 August the plan was presented to General Ridgway and General Dunn, who was then commanding NAAFTCC.† On that same day it was approved by General Alexander, whose 15th Army Group was the highest ground command in the theater. On 21 August, General Ridgway notified the Troop Carrier Command that 130 Waco gliders and 300 C-47's would be needed to carry his troops on the mission. This estimate was taken as the basis for preliminary planning.<sup>2</sup>

GIANT I was constantly modified. At first it was expanded. On 22 August, Cancellio was included among its objectives. On 23 August GIANT was given the truly gigantic task of holding all the Volturno crossings from Capua to the sea. To aid in this, the glider regiment of the 82d was to make an amphibious landing at the mouth of the Volturno and fight its way inland to join

\*The Hermann Goering Division moved through Nocera on the night of 9 September to aid the hard-pressed 16th Panzer Division at Salerno. No other German division reached the battlefield until 11 September. Thus possession of Nocera by American airborne troops might have been of great assistance to the Allies. (Gens von Vietinghoff and Schmalz, The Campaign in Italy, chap. VI, Trans. No. VII/97, Air Hist Branch Brit. Air Min, in 512.621, v. 31.)

†NAAFTCC (Prov) was redesignated XII TCC (Prov) as of 1 Sep 43. General Dunn held the command from 10 Aug-9 Sep 43 in the absence of General Williams. (Hq NAAF GO 166, 26 Aug 43; Hq XII TCC Diary, 10 Aug, 9 Sep 43, in 611.13.)

the paratroops in the airhead. The division would then be able to fight as a complete unit. However, naval reconnaissance of the sandbars around the Volturno's mouth indicated that a landing there was not feasible. Cancellation of this part of the mission, under consideration for several days, was not announced to the 82d until 3 September.<sup>3</sup>

Without this contact with the sea the airborne troops faced isolation until help could arrive from Salerno. Estimates of the minimum time in which they could be reached ranged from four to eight days (It was later recognized that the Fifth Army might not have reached them for a month.). Between Salerno and the Volturno lay more than 40 miles of very difficult terrain. Nevertheless, the airborne commanders were eager for the mission, and later regretted that it did not take place.<sup>4</sup> They believed that their men could maintain themselves until relieved, provided that Fifth Army moved quickly, and that, if worst came to worst, they could take to the hills.

The air staffs were much less optimistic. During its isolation the airborne force would have to be supplied by air. The number of planes needed for this task was variously estimated at from 90 to 145 a day or from 30 to 45 percent of all the C-47's in the theater. Because of the distance between Salerno and the fighter bases in Sicily, all available fighter planes would be occupied in maintaining cover over the beachhead; hence, the resupply missions would have to make their flights to the Capua area unescorted. The enemy, expecting their arrival, could ambush them with fighters or concentrate antiaircraft batteries near their destination. Consequently, General Dunn was dubious as to whether the resupply missions could be carried out. The upshot was that on 31 August, Air Marshal Tedder decided against the resupply missions. Eisenhower, accepting his recommendation, directed that GIANT I be reduced to a two-battalion effort limited to the Capua area and provided with a five-day level of supplies.<sup>5</sup> Three days later the mission was canceled because of diplomatic developments rather than military considerations.

Italy had been negotiating for an armistice since 15 August. She seemed almost embarrassingly ready not only to surrender but to put her forces at the service of the Allies. The one stipulation to which her leaders clung was that the English and Americans send as large a force as possible to

the vicinity of Rome to help defend that city against the Germans. If this were done, Italy would join the Allies. So pleasing a prospect eclipsed all previous plans.

General Eisenhower saw that the offer of an operation to save Rome might be decisive. He was firmly resolved on AVALANCHE and lacked resources for a second amphibious landing of any size. By using the planes earmarked for the Volturno operation he could send an airborne force to the Italian capital. He indicated to the Italians his readiness to do this, provided the Badoglio government would publicly proclaim an armistice and pledge full military support to the airborne mission. Late at night on 1 September the Italians decided to accept his terms. Two days later they signed a secret armistice.<sup>6</sup>

Planning was begun immediately for the Rome mission, which was christened GIANT II. About noon on 2 September General Ridgway was called to a conference with the commanding general of NAAF at La Marsa, where he was briefly informed that a landing at Rome was being considered and was told to report to 15th Army Group at Syracuse to assist in its preparation. On 3 September, Lt. Gen. Mark W. Clark, likewise summoned to Syracuse, was shocked to learn from Eisenhower and Alexander that his Fifth Army would have to forgo its Volturno operation to make possible the mission to Rome. Although some of the troop carrier staff knew as early as 2 September that GIANT II was a possibility, it appears that the command did not receive formal notification that GIANT I had been superseded until late on 4 September after field orders for that mission had been issued and some pilots had already been briefed.<sup>7</sup>

The Italians offered five airfields near Rome for use in the Allied landings. Three were rejected because of the heavy concentrations of German antiaircraft guns along their approaches. The two fields approved, Furbara and Cerveteri, lay close to the coast about two miles apart about 25 miles northwest of Rome. Though they were relatively safe and accessible, their capacity was limited. General Ridgway convinced Alexander that operations there should not involve more than one PCT.

Thus the plans for GIANT II issued by Troop Carrier Command on 6 September called for a mission to Furbara and Cerveteri by a force of 130 planes (quickly amended to 135) to lift the first

two battalions and part of the headquarters of the 504th Parachute Regiment, a battery of antiaircraft artillery and some other support troops on the night of D minus 1. (D-day for AVALANCHE had been set for 9 September.) Taking off from Sicily, the troop carriers would assemble, fly northwest over the Tyrrhenian Sea, pivot off the mouth of the Tiber over a British submarine equipped with a radio beacon and an Aldis lamp, and run in over the coast. The Italians would have landing aids working at the Rome airfields, and pathfinder teams dropped 15 minutes earlier at Cerveteri were to have radio beacons in operation. The first 90 planes would drop paratroops. Then if all went well the others would land. To provide at least a minimum of reinforcements some elements of the 82d Division were packed into three LCI's and an LST and headed for the Tiber.\*<sup>8</sup>

It was clear, however, that without whole-hearted Italian assistance the airborne troops could not maintain themselves. Neither Dunn nor Ridgway cared to risk their men on the strength of Italian promises; Eisenhower and Alexander shared their uneasiness. At 0200 on 7 September, Brig. Gen. Maxwell D. Taylor, who had been liaison officer for the 82d Division at Allied Force Headquarters, and Col. William T. Gardiner, A-2 of the 51st Troop Carrier Wing, set out secretly for Rome to explore the situation. They found the Italian leader, Marshal Badoglio, pessimistic and apathetic. His chief of intelligence stated that the Nazis had cut off the Italian Army's supplies of ammunition and gasoline, leaving it helpless. At the same time the German garrison along the Tiber had been increased from 3,000 to 12,000 men with 100 big guns. Taylor and Gardiner felt "the situation invited disaster" and that there was "no possibility of carrying out GIANT II as planned." A code message advising cancellation of the mission was sent by Taylor before midnight and was received in Algiers about 0800 on 8 September. With it went one from Badoglio indicating a strong desire to renege on active support to the Allies. Eisenhower, then at Carthage, learned this news about noon. Within two hours he ordered that the Rome mission be postponed. His decision took six hours to reach airborne and troop carrier headquarters at Licata, Sicily. It almost arrived too late.<sup>9</sup>

\*They were halted at sea and diverted to Salerno where they landed with the Rangers on 11 September.

At 1715 Badoglio announced the armistice in a radio address, the wording of which was supposed to indicate whether the Rome venture was on or off. The airborne and troop carrier commanders listening at Licata thought he had given the signal to proceed. When Eisenhower's orders for postponement reached the airfields the planes were loaded and ready, and one group was taxiing into position for take-off. Next day the situation at Rome was obviously out of Italian control, and GIANT II was canceled.<sup>10</sup> Had the message from Eisenhower arrived an hour later, the troop carriers would have been well on their way to Rome, and it is by no means certain that they could have been recalled. So narrow an escape demonstrated the need for close contact between all headquarters concerned in an airborne mission.†

The adoption and cancellation of GIANT II made the 82d Division and the whole Troop Carrier Command lie idle during the first critical days of the invasion of Italy when, as General Bradley has written, they were "most desperately needed." This led some officers to question the utility of reserving large resources for airborne operations.<sup>11</sup> Their criticism could not have applied to the Volturno project which would have used the airborne troops on a large scale for objectives of great tactical value; it was irrelevant to the Rome mission because that was as much a political gamble as a military operation. An airborne force is a weapon of opportunity. GIANT II was prepared in order to grasp an opportunity to win a nation rather than a battle. The estimates of Italian morale and German capabilities on which it was based may be questioned. It cannot be said that the game was not worth the candle.

### Training

Though the need for thorough joint training and rehearsal before an airborne mission had been demonstrated in Sicily and officially recognized by Allied Force, singularly little training was actually provided for the troop carriers and paratroops before the invasion of Italy. During the Sicilian campaign the need of fast-moving troops for air supply had again drawn the Troop Carrier Com-

†Delays in maintenance and replacement of troop carrier planes would have made the long flight hazardous even if unopposed. One report stated that it was widely believed by troop carrier personnel that engine trouble would have prevented 25 percent of the planes from completing the mission. (Molcsy, Final Rpt on the Avalanche Airborne Drop.)

mand deep into transport operations, and the paratroop regiments of the 82d Airborne Division had been used as ground troops.

On 30 July, after learning of the first plans for AVALANCHE, General Ridgway had urged that his paratroops be given at least three weeks of training. Such training would entail their return to Tunisia where the troop carrier units were still based; the 82d and the troop carriers would be pulled out of the Sicilian campaign to train for a mission still unknown. Hence, for two vital weeks no action was taken. Then on 16 August, just before final approval of AVALANCHE, NAAF gave the word for Troop Carrier Command to begin intensive training with the 82d,\* which was to move to Tunisia by sea. Since such leisurely movement would have left no time for training, Ridgway on 18 August obtained permission to call on the troop carriers for an airlift. By 21 August, when orders for shipment by water reached Sicily, his regiments were already in Tunisia.

Even so, only one week of training (24-31 August) could be scheduled before deployment began. No mass jump could be included in the training, since there was not time to repack all the parachutes. Yet this brief training paved the way for a revolution in airborne operations, the use of pathfinder groups equipped with radar beacons.<sup>12</sup>

Pathfinders in the airborne sense of the word are planes sent out ahead of a mission with specially trained crews and pathfinder teams of airborne troops, who are deposited on the proposed landing or drop zones in time to set up navigational aids before the rest of the expedition arrives. Guided by the best available navigators and protected by the element of surprise, the pathfinder pilots have a better chance to locate their objective than do the leaders of the formations within the main force. Moreover, if the pathfinder teams do not land exactly on the prescribed zones, they can move to them and direct the main body to the precise spot. Without pathfinders, minor errors by the lead planes are likely to be perpetuated and exaggerated by the rest.

The British had experimented with pathfinder tactics. So had a few Americans of the 509th PCT at Oujda, but the technique was still little known.

\*About 18 August it was decided that both TCC Wings would work with the 82d Airborne. The British 1 Airborne and 38 Wing would not be used in AVALANCHE. (A-3 Diary, Hq NAAF TCC [Prov].)

When on 15 August 1943 British officers asked whether the 52d Troop Carrier Wing had ever employed pathfinder flights in its training exercises, the answer was, "No."<sup>13</sup>

The value of pathfinder tactics was extremely limited so long as only visual aids such as panels and lights were used. Some lights could be seen in good weather at a surprising distance. The flash of the Krypton light was said to be visible to a plane 30 miles away. However, even moderately bad weather greatly reduced their effectiveness. Mediterranean tacticians sought to remedy this weakness through the use of radar and radio beacons by pathfinders. In this they were pioneers. The first small tests of such equipment for pathfinder operations were not begun in the United States until October 1943.<sup>14</sup>

During August hasty pathfinder training was given in North Africa to a limited number of troop carrier crews and airborne teams. Fortunately it proved possible to complete their training in 10 to 14 days. Thus the new methods could be tested in the training exercises at the end of the month.

Full-scale rehearsals were flown on 28 and 31 August. In these, two beacons, the 5G and the Eureka, were tested for use on drop zones and landing zones. The 5G, a 33-pound British radio beacon with a range of up to 40 miles, had been modified so that the radio compasses carried by all the troop carrier planes could receive its signals. The 5G required rather delicate adjustment, and the radio compasses were sometimes unreliable. The Eureka, Mark II, was a radar beacon weighing about 55 pounds. An airborne interrogator called Rebecca displayed its responses as "blips" on a cathode ray tube. The position of the "blip" indicated the bearing and, less accurately, the distance of the Eureka. The available sets were limited in range by lack of power in the transmitter. Only 16 aircraft in the command were equipped with Rebecca and only 28 men could operate it. All were in the 52d Wing.

The 5G was tested on the 28th with completely negative results because of interference from a neighboring HF station on the same frequency. The Eureka did better. That night it was picked up at ranges of 15-20 miles and the 3 groups guided by it flew over the beacon. No drops or landings were attempted. In the exercise on the 31st 3 pathfinder planes, flying 15 minutes ahead

of the main force dropped a team with a Eureka beacon. The equipment was in operation on the DZ within five minutes. Though only token drops were made, it was estimated that 90 percent of the troops would have come down within about a mile of the beacon. The success of the Eureka led to an immediate decision to use both it and the 5G in the coming operations.<sup>17</sup>

Early in September the Troop Carrier Command moved from Tunisia to Sicily. By 5 September the move was completed and headquarters had been officially opened at Licata. The troop carrier groups which had been well concentrated in Tunisia were now scattered over a dozen fields along the entire south coast of Sicily. The 6th and 7th were spent in moving to Sicily the two battalions of paratroops to be used in GIANT II. Then, while the 135 aircraft earmarked for that operation were grounded, the rest were engaged in bringing back to Sicily the remainder of the 82d Division, excluding the glider regiment but including the 2d Battalion of the 509th (formerly 503d) PCT, which was attached to the division. This movement was not completed until 19 September. It seems clear that the deployment of the troop carrier and airborne units would have been facilitated if the 82d had stayed in Sicily and TCC had moved forward to train there with it.

#### Salerno and the Sele Missions

When Fifth Army landed at Salerno before dawn on 9 September, the 82d Division and the troop carriers were in the hands of higher echelons and unavailable to General Clark. After the Rome mission fell through, other projects, notably a mission to Brindisi, were briefly considered. These came to nothing, and on the 11th Clark was informed that the American paratroops and troop carriers were at his disposal. He proposed next day that they be used that very night in missions northeast of Naples and at Avellino. The first would delay the arrival of German reinforcements from the north.\* The latter would cut German communications at a focal point behind the Salerno front.<sup>18</sup>

Ridgway and Williams accepted these operations but asked for a day or two in which to make ready. Within a few hours they had set up a paratroop

\*The German command in North Italy hoarded at least two divisions which, if sent to Salerno, might have had a decisive effect.

mission to take and destroy the Volturno crossings at Capua on the night of the 13th. In this revised version of GIANT I the first two battalions of the 504th Parachute Regiment, aided by two platoons of engineers, would be carried by 100 planes of the 52d Wing. The troops selected were already prepared for the Rome mission. The only important change was the substitution of the 61st Group at Licata for the 54th Group at Comiso to lift the 1st Battalion.

On that same day Ridgway and Williams prepared to have 40 planes of the 51st Wing drop the 2d Battalion of the 509th PCT and a demolition detachment near Avellino on 15 September.<sup>17</sup> These plans were altered by an emergency. The Germans took the initiative on 12 September and so threatened the position of Fifth Army as to create an urgent need for reinforcements. Some preliminary planning for a reinforcement mission was done on the 12th. A suitable drop area was selected south of the Sele River and Troop Carrier Command sent to Tunisia for photographs of the region.<sup>18</sup> On the morning of the 13th the center of the Allied line at Salerno began to crumble, and General Clark decided to call for airborne reinforcements. These would have to come in by parachute, since there were no fields in the beachhead at which they could be airlanded, and the glider units were not ready.

Clark first informed his superiors via 15th Army Group. Then, apparently without waiting for a reply, he summoned the 82d Airborne to his aid. A fighter pilot who had made an emergency landing volunteered to deliver to Ridgway a letter and maps showing a drop zone. In the letter Clark directed that a regiment be dropped south of the Sele that night. "This is a must," he wrote. He also asked that the Avellino mission be carried out as soon as possible. The pilot arrived at Licata at 1330 and insisted on delivering his message to Ridgway in person. The latter had just taken off on a flight to Termini but was recalled by the control tower. Fifteen minutes later a message arrived at TCC from NAAF cancelling the Capua operation. The reinforcement mission had been given a clear field.<sup>19</sup>

Troop carrier and airborne commanders immediately conferred on the feasibility of the new project. Before 1530 Clark's emissary was on his way back with their assent to the Sele operation. The troop carrier wing and group commanders

happened to be at Licata for briefing on the Capua mission. They were orally briefed on the new plan and dispatched to their units about 1600. Swift action was made possible by a decision to employ essentially the same team of troops and planes then in readiness for the Capua mission.\* Thus existing arrangements for staging and loading could be utilized. These could hardly have been improvised in the time available.<sup>20</sup>

The route had to be improvised. So did the protection of the mission from the fire of Allied guns. The Voltorno and Rome missions had been scheduled to fly in a straight line across the Tyrrhenian Sea through a safety corridor to offshore beacons near their objectives. No such beacon was ready for the Sele mission. More important, there was no time to set up a safety corridor for it, and the sea west of a line from Milazzo in Sicily to Licosa on the south side of the Bay of Salerno was a restricted area, closed to Allied planes.<sup>21</sup> Consequently the commanders chose a course along the coast of Italy.

The 313th Group at Trapani would assemble over that town. Planes of the 61st and 314th Groups would load and take off at Comiso and assemble over that base. The two formations would meet at Cape Rasocolmo on the northeast tip of Sicily. From there they would fly successive offshore dog-legs to Cape Vaticanò, Cape Bonifati and Cape Palinuro. Then they would head up the valley of the Alento across the base of Licosa Point to the town of Agropoli, a convenient check-point on the coast five miles south of the drop zone. The drop zone, an area about 1,200 yards long and 800 yards wide, lay on flat land between the highway and the sea just north of the Solofrone River and about six miles south of the Sele. About four miles to the south of the drop zone was the front. Given good visibility, the route was almost unmistakable. The mission would be flown at minimum altitude in V of V's formation. Amber belly lights would be used for recognition, and it was emphasized that all planes were to have their IFF in operation. If all went well, the same route, tactics and drop zone would be used on the following night to bring the 505th PCT to Italy.<sup>22</sup>

Control of Allied guns during the mission was of paramount concern to commanders who had been involved in HUSKY 2 and FUSTIAN. Ridg-

\*A pathfinder plane was substituted for one carrying an air support party, and ten planes scheduled to carry supplies and munitions were omitted.

way wrote in his reply to Clark "Rigid control of antiaircraft fire is absolutely essential." Clark took no chances on half-way measures. He called in the naval commander and the commander of the American VI Corps, which held the southern half of the beachhead, told them of the mission, and directed that from 2100 until further notice from him all antiaircraft guns in the Salerno area would be silenced and barrage balloons be taken down. He also sent out officers to the batteries themselves to make sure that his orders were transmitted and understood. Meanwhile Troop Carrier Command was hurrying to get word of the mission to the antiaircraft units in Sicily.<sup>23</sup>

By 1630 the 52d Troop Carrier Wing was informed of the mission. It alerted its units, but, presumably for security reasons, did not tell them of the change of plan. The 313th Group was briefing for the Capua mission when its commander arrived from Licata considerably after 1630 with news of the change. Its briefing, done hastily after supper, was interrupted when several Italian planes flew in to the field to surrender. The planes of the 61st and 314th Groups had to fly in to Comiso from Licata and Castelvetrano to pick up their troops. There, while the men of the 504th were climbing aboard the planes, the troop carrier personnel were briefed "by the light of a few flashlights and maps held against the side of a plane." Photographic coverage appears to have been lacking. Reliance on oral information caused considerable confusion. For instance, Licosa Point, an essential landmark appears in a mission report as La Rosa Point. Fortunately no serious errors were made.<sup>24</sup>

The operation began at 2045 with the departure of three pathfinder planes from Agrigento, the field where the 52d Wing had its headquarters. The pilot of the lead ship was Lt. Col. Joel L. Crouch, A-3 of the wing and a strong proponent of pathfinder procedures. Favored by fair weather, light winds, and a full moon, the pathfinders readily found their way to the objective. Just as the pilot was remarking that they should be over the drop area, flashlight signals and a green Very light were seen directly ahead. At 2314 as the first troops jumped, a T with its stem pointing up wind burst into flame on the DZ. This T and another row of flares marking the south side of the zone had been set up by Fifth Army engineers under the direction of a liaison officer from Troop Carrier Command

in accordance with the plan set forth in Clark's note to Ridgway. The flares, five-gallon cans filled with sand soaked with gasoline, were highly effective, being seen by some pilots as much as 17 miles away.

The airborne pathfinder teams had been organized only a week earlier at Agrigento, but most of the men had had previous training and several had taken part in the Tunisian rehearsals. They were able to set up their equipment while blindfolded. The team from the lead plane landed squarely on the drop zone. It had with it a Eureka, a 5G transmitter, and a blue Krypton light. The beacons were in kits attached to a jumper's leg in the British fashion by cords let out during the jump. The 5G broke loose and was smashed in the landing; the Krypton light was used to assemble the troops, but not to guide the planes; the Eureka was in operation within three minutes. The second stick, carrying a Eureka and a Krypton light, landed across a ditch from the DZ. This equipment was held in reserve. The third plane carried combat troops sent to protect the others.

Each group and squadron in the main force was to be led by an aircraft equipped with Rebecca. However, two of these sets were not used. The signals of the seven Rebeccas in operation were received at ranges of 7-13 miles. Despite the inexperience of the operators and "squittering" in the receivers, they proved useful guides.<sup>23</sup>

The first group to follow the pathfinders was the 313th, which took off from Trapani-Milo about 2040 with 36 planes. Two aircraft had to return because of mechanical difficulties, but the troops in one of them were quickly shifted to a reserve plane which hastened after the rest. At the 1,000-foot level the group encountered cumulus clouds which forced its planes to fly for a few minutes on instruments and then to climb to 1,800 feet to get into the clear. Otherwise, all went smoothly.

At 2326, four minutes ahead of schedule, the 313th arrived over the drop area, and from its 35 planes the 2d battalion of the 504th jumped at a height of about 800 feet. So well had the pilots kept formation, and so clear was the drop zone, that most of the troops landed within 200 yards of the DZ and all within a mile of it. The planes cut back across the Tyrrhenian to Sicily by way of Cape Palinuro, Stromboli and Cape Milazzo, thus skirting the edge of the navy's restricted area. They flew above 6,000 feet to avoid fire from convoys.

By 0315 all squadrons of the 313th had returned to their bases safe and sound.<sup>26</sup>

Scheduled to leave from Comiso at about the same time as the 313th were 42 aircraft of the 61st Troop Carrier Group and 9 from the 314th. At the last minute several planes proved unfit to go. After a delay of nearly 3 hours, 41 aircraft of the 61st set out between 2320 and 2352. Because of their late start, their junction with the 313th never took place. They flew what amounted to a separate mission.

The 61st reached the drop area without incident and began dropping troops at 0130 on 14 September from altitudes between 800 and 1,000 feet. The group was divided into four flights, one of which relied on conventional navigation, while another had no operator competent to operate its Rebecca. It was probably this flight which, having lost touch with the main formation early in the trip, dropped B Company of the 504th eight to ten miles southeast of the DZ. The other three flights made good drops, all their paratroops coming down within a mile of the drop zone. After the drop the 61st returned to Sicily by the same way it had come and landed safely at its home fields between 0315 and 0415.<sup>27</sup>

The 314th Group had even more difficulty than the 61st in dispatching its flight. Two of its aircraft were grounded by electrical trouble. Their loads were redistributed among the other planes. Then the Rebecca-equipped lead plane had a blow-out. Finally, at 0015 on the 14th six pilots took off and navigated the route to the DZ. At least one saw the T, and all appear to have dropped within a mile of it. They were back at their base in Sicily by 0430.<sup>28</sup>

Though all pilots found their way to the beach-head, many had not kept formation. Observers on the Sele drop zone reported that the planes "came in from all directions." It seems certain that without the Eureka and the flares, considerable dispersion would have occurred.

The operation was not affected by enemy action. German planes were reported overhead during the mission, and one plane apparently tried to find the frequency of the beacon. None attacked.

The lights on the drop zone were extinguished in the intervals between the arrival of formations, but German troops in the hills to the south must have seen them. Though within easy artillery range they made no attempt to shell the area,



*Figure 3. Troops Loading Parapacks for Salerno Drops, September 1943.*



Figure 4. Final Briefing for First Salerno Drop, 13 September 1943.

probably because Kesseling had concentrated his men and artillery on the center of the front.

The first Sele mission\* had been accomplished without loss to the troop carriers. A force of about 1,300 troops had been carried to the Italian battle front by 85 aircraft within 15 hours of Clark's initial request. Only one of the parachutists had been seriously injured in landing, and only one company (which reported next day) had been dropped more than a mile from the drop zone. Handie-talkies had been dropped with the pathfinders to aid in assembly, but, because of the high degree of concentration, the flares and the Krypton light proved sufficient. Within an hour after the last man jumped, the paratroops assembled, loaded into trucks, and set out for the front.<sup>29</sup>

During the afternoon, German attacks had temporarily broken the center of the Allied line and threatened to drive down the Sele valley to the sea. Clark had stripped his southern flank to strengthen his center. It was to this denuded southern front, manned only by a handful of infantry from the 45th Division, reinforced by beach engineers, that the paratroops were hurried. By dawn they were in position in the Albanella sector facing the enemy.

The success of the first Sele mission ensured the sending of a sequel. Troop Carrier Command got word from NAAF at 1340 on the 14th and the 82d Division from Fifteenth Army Group at 1420 that the Avellino operation would take place that night and that the Sele drop would be repeated with the maximum number of paratroops. One parachute battalion was earmarked for Avellino. Another was on its way to Salerno by boat. The force available was thus limited to the 505th Parachute Combat Team. The situation at the front was still so critical that Troop Carrier Command was told the mission was "most urgent."<sup>30</sup>

Although as far as possible the second Sele mission was to be a replica of the first, there was little time for briefing and for loading plans. At 1500 the 52d Wing briefed the staff of the 316th Troop Carrier Group, which had not participated on the previous night, and perhaps the staffs of

\*Since there is confusion as to the usage of code names for these impromptu operations, they have been avoided in the text. The name GIANT III is sometimes given to the two Sele missions (alias GIANT I [Revised] and GIANT IV) and sometimes to the Avellino mission (alias AVALANCHE). One group calls the first Sele mission GIANT II and the second GIANT III. (XII TCC Report, pp. 64, 72-73, 78, 93, 97-98, 121, 123; Hist 314th TC Gp Sep 43.)

other groups as well. After returning to their own fields, the 316th began briefing their flying personnel at 1630.

In the second mission to the Sele, 131 planes of the 52d Wing were committed to carry the 505th Parachute Regiment and a company of engineers, about 2,100 men in all. Pathfinder planes from Agrigento would again precede the main force, which was to make its drop at midnight, simultaneously with one at Avellino.

With Colonel Crouch again piloting the lead aircraft, three pathfinder planes took off at 2147 and flew over at a height of over 6,000 feet to the Italian coast where they descended to 1,000 feet. The night was calm with a bright moon, but somewhat hazy. As they neared the drop zone, the pilots saw the T already blazing to light them in. Men of the 504th were operating a Eureka on the DZ but the pathfinder craft had no Rebecca. At 2338 the airborne pathfinder teams jumped from a height of 700 feet onto the center of the zone. Within three minutes they had another Eureka in operation. They kept in reserve a Eureka, two Krypton lights and a 5G transmitter. The latter was not used lest it interfere with a 5G which was being employed in the Avellino drop.

The first formation to follow the pathfinders was to consist of 6 flights, 54 planes, from the 313th and 314th Groups. All but one flight would be led by planes with Rebecca. One plane had a blowout; the rest took off from Castelvetrano and Borizzo more than an hour behind schedule. On board were the 3d battalion and the headquarters of the 505th and the engineer company. The 314th found "extreme difficulty" from the start in keeping formation, and their flights soon separated. At 0110 on the 15th the first planes reached their destination and began the drop. In the haze some pilots had difficulty in seeing the T, and several missed the DZ on their first run. One flight leader who failed to receive the radar signals got lost, and he and his wing man returned with their loads. All the rest made accurate drops, although one other flight leader, unable to use his Rebecca effectively, had had to bring his planes over the DZ without its help. A minor flaw in the performance was the fact that 19 hastily installed pararacks failed to release.

The second formation, 38 aircraft of the 61st Group, had 5 Rebeccas to guide them. As on the 13th, they flew from Licata to Comiso to be briefed

and to pick up their troops, who this time were the 2d Battalion of the 505th. This formation, too, was delayed for well over an hour. About 2320 it took off from Comiso. It made its drop between 0129 and 0135 after an uneventful trip. The jump was completely successful, even though one Rebecca had failed to work, and one flight had preferred, as it had on the previous night, to rely on unaided navigation.

The third and last formation comprised 36 planes of the 313th and 316th Groups with only 2 Rebeccas to guide them. They were scheduled to take off at 2200 from Borizzo with the 1st Battalion of the 505th. The units of the 316th, based at Mazzara, had to fly in to Borizzo to pick up their troops. They left Mazzara between 2045 and 2130. Their loading must have delayed the departure of the formation but hardly accounts for the fact that it did not take off until about 0100 after a three-hour delay. Despite some difficulty in picking its way through the haze, the formation reached the drop area at about 0300. A successful approach was made, using both T and radar as guides. However, three pilots who had become separated from the rest found themselves to their surprise over the city of Naples. One groped his way back to the DZ and dropped his troops after the lights were out and the radar was turned off. The other two pilots gave up and went home with their loads. Another failed to drop his troops because of faulty signals. All planes in the mission returned safely to their bases over a short cut from Cape Palinuro to Stromboli to Cape Milazzo. The pilots of the first two formations were home by 0330 and 0430 respectively, but the last ship of the 316th did not land until 0545.

Delays marked the second Sele mission even more than the first. While their exact causes are obscure, they were undoubtedly the price paid for extemporized action, a price probably compounded by the worn condition of planes and equipment. The resultant piecemeal delivery of troops would have been intolerably dangerous if the drop had taken place in enemy territory. Under the circumstances, it passed without comment.

In the second mission as in the first, pathfinders had proved their worth. The T had been seen and used by most pilots in spite of the haze. Of 11 Rebeccas in operation, 9 had given responses at 6 to 17 miles, the average range being 10 miles.

Of 130 planes which left Sicily on the second Sele mission, 125 had delivered their loads. Even better, 123 of them had dropped over 1,900 troops within a mile and a half of the drop zone.\* Most of the men had jumped at heights of 600 to 900 feet and had landed in "extremely small jump patterns" within 200 yards of the DZ. An observer called it "without a doubt the most successful jump the 505th CT has ever made." Few injuries were suffered, and, as on the previous night, the units assembled quickly and easily. Within 45 minutes after the last man landed, the 505th was aboard trucks and on its way to the front. The regiment took over the southern flank of the beachhead from the 504th's positions around Albanella to the sea at Agropoli.<sup>31</sup>

The Avellino mission was a far more difficult undertaking than the reinforcement missions. Avellino, about 20 miles north of Salerno, was surrounded by mountains over 4,000 feet high, the most difficult terrain encountered by any airborne operation in Europe during World War II. More than 15 miles behind enemy lines on an active battle front, the area could not be reached without grave danger from antiaircraft and interceptors. Heavy Nazi troop concentrations were in the vicinity, but their exact location was unknown and, in so fluid a situation, unpredictable.

On the other hand, the objective was a worthy one. The town was a bottleneck through which almost all traffic from the northwest had to pass to reach the German front. The bulk of the Germans around Salerno were cut off from the Nocera route. Alternative roads east of Avellino were circuitous and slow. By a roadblock at Avellino, or by thorough demolition of the bridges there, the German position could be made much more difficult, if not untenable.

The mission had been planned on the 12th and revised on the 13th at Licata at the same anxious conference which set up the Sele operations. There the 64th Troop Carrier Group of the 51st Wing was designated to fly 598 paratroops of the 2d Battalion, 509th PCT, and a demolition crew of 40 engineers to Avellino. The route selected was to coincide with that of the Sele missions from Sicily to Agropoli. From there, instead of flying to Salerno and then up the main highway to

\*Two planes had gone astray and jumped their troops more than 15 miles to the north, one stick-landing behind the German lines near Eboli.



Map 11

Avellino, as had been planned on the 12th, the troop carriers were to fly across the Allied bridgehead to Montecorvino and thence through mountain valleys to their objective. This simplified the protection of the mission from Allied fire and kept it away from the convoys off the beaches. It also avoided enemy antiaircraft, believed to be heavy on the way from Salerno to Avellino.

Unfortunately, the change was made too late to obtain photographic coverage of the new approach route, although coverage of the Avellino area itself was available. The change also deprived the pilots of valuable checkpoints. Without Salerno and the highway to guide them, they were to find that one mountain valley looks very much like another.

For an hour or two consideration was given to making the drop on the night of the 13th, but by 1540 Troop Carrier Command had received instructions to postpone it till the next night. The 51st Troop Carrier Wing then issued orders providing that the drop be made at 4,000 feet above sea level by 40 planes flying in 2-ship elements at 30-second intervals. The height of the drop and presumably the type of formation were dictated by the mountainous nature of the terrain around the objective. Though all planes were to have their IFF in operation, no downward recognition lights would be used. The mission was to be synchronized with the second Sele operation. A pathfinder team would jump at 2345 and the main drop would begin at midnight. After the drop the planes would swing down the main valley to Salerno and return over the course by which they had come. The distance to be covered was over 300 miles each way.

Several details, including the exact location of the drop zone, were left to be settled by conference between the group and battalion commanders. On the 14th they selected a crossroads outside the village of Santa Lucia di Sorino in a valley nearly three miles southeast of Avellino. A drop nearer Avellino might have landed the troops in a hornet's nest. Also on the 14th a decision was taken to have the 64th leave from its home field, Comiso, rather than Licata, which had been designated on the 13th.<sup>22</sup>

About noon on 14 September the group commander gave a preliminary briefing to those selected for the mission. At 1300 the 40 planes, 10 from each squadron, were flown to Licata and

loaded while pilots and jumpmasters were being briefed by the Troop Carrier Command. About 1600 the task force returned to Comiso.

At about 2125 the pathfinder plane took off, flown by the commander of the 35th Squadron. It met considerable antiaircraft fire over the enemy lines but made its way to the designated valley. There about 2330 it dropped a team of two officers and nine men at a crossroads over a mile south of the selected drop zone. The error could not be blamed on poor visibility: buildings were plainly visible in the moonlight. The target was not sufficiently distinctive.

The pathfinders, feeling there was no time to lose, went to work on the spot and were in operation within 10 minutes. Luckily their equipment, though dropped separately, landed in plain sight beside the men. They had a 5G transmitter and two Aldis lamps. The narrow beam of the Aldis was considered safe from enemy observation but was also difficult for a pilot to pick up if he were not exactly on course. No Eureka had been taken, since the 51st Wing was not equipped with Rebecca.

The rest of the expedition began taking off from Comiso at 2135 with the group and battalion commanders in the lead plane. They flew at 3,000 feet above sea level to Cape Rasocolmo, below 1,000 feet to the bridgehead, and as high as 4,300 feet through the mountains to the drop area. One squadron took the wrong turn into the mountains and had to return to the coast to try again. Another squadron flew to the right instead of the left of Mt. Terminio and dropped 11 sticks near Casano—10 miles from their destination—at a place resembling the drop area. A dozen more planes dropped their troops between 8 and 25 miles from the drop zone. Two planeloads were still unaccounted for a month later. Only 15 planes, dropping at intervals between 0003 and 0045 on the 15th, managed to place their paratroops within 4 or 5 miles of the drop zone. Obviously the formation had not held together, and the navigation aids had not been sufficient. At 0110 the pathfinder team ceased operations, destroyed its equipment and concealed the fragments.

The pathfinder plane returned at 0130. The other pilots all got back safely before 0300. Some ground fire had been encountered near the drop zone, and two planes had run into an area of intense rifle and machine-gun fire, but aside from

a few bullet-holes in those two planes the enemy did no damage. No hostile aircraft appeared, though one British night fighter almost shot down a C-47 before the pilot recognized it.

When interrogated, the erring pilots had, as usual, no inkling of their mistakes. They considered the mission "highly successful." They did, however, condemn the 5G as useless. Only two planes had picked it up, both at a range of about five miles, and reception had been unsatisfactory. The beacon may have been weak or mismanaged. The operators had had only a few minutes instruction in its use. The mountains may have hampered reception, but such interference would hardly have affected the planes which reached the vicinity of the drop zone. Eight pilots, about half of those who came within range, saw the beams of the Aldis lamps and found them a useful guide.<sup>33</sup>

The plight of the paratroops was even worse than the scattered character of the drop would indicate. Because of the mountains the troops had been dropped from altitudes between 1,500 and 2,500 feet above the ground. Though the night was calm, drifting down from such heights was bound to increase dispersal. Even men fortunate enough to land in the same valley were separated by woods and vineyards. For several days the 509th was unable to get together a single group of more than 80 men. Most of the equipment, including the mortars and bazookas, was lost or tangled in treetops. One group which landed in and around a German tank park was under fire during its landing and its members were captured or scattered before they could organize. A band of about 50 men with only 25 pounds of dynamite eventually made its way to Avellino from beyond Cassano and blew a hole in a bridge on the road to Montecorvino. The demolition did tie up German traffic, but it was performed on 19 September after the battle of Salerno was already won. Although the battalion engaged in innumerable skirmishes, this demolition was its only major achievement.

Erroneously briefed to expect the speedy coming of Fifth Army, the paratroops lurked in the hills for several days before filtering back to the Allied lines. Over a hundred were still at large in the area on 30 September when Fifth Army took Avellino. On 8 October, 118 men, nearly 20 percent of the troops who had made the jump, were dead, wounded, or missing.<sup>34</sup>

At least one report classes the Avellino venture

as "more effective" than either of the Sele drops.<sup>35</sup> This view emphasizes the alarm and despondency produced among the Germans by the Avellino mission. Actually, they appear to have appraised the situation correctly when the initial surprise was over and left the men of the 509th to wither on the vine. Minor damage and some casualties were inflicted, and the Nazis were forced to increase their guards. All this could not nearly offset the fact that the crack fighters of the 509th had been so scattered that they could not fulfill their mission. The parts in the failure played by inadequate training, a difficult route, an obscure drop zone, inadequate pathfinder facilities, and loss of equipment are hard to estimate, but it seems clear that the mission was a failure.

In contrast, the Sele missions, executed almost perfectly, had secured the whole southern flank of the Salerno beachhead when there was no other way to reinforce it. In February 1944 Brig. Gen. Lauris Norstad, then head of MAAF's Operations and Intelligence Section, said that in his opinion the airborne troops had been "essential" at Salerno, but in no other Mediterranean operation.<sup>36</sup>

The word "essential" is perhaps too strong. Unknown to the Allies, Kesselring had shot his bolt on the 13th. Fifth Army's foothold in Italy was probably secure by the time the paratroops arrived. If the Nazis had not hoarded their reserves in northern Italy, the value of the Sele missions might have received a spectacular test.<sup>37</sup> As it was, their effectiveness was evident enough to win a reprieve for airborne operations.

#### **Plans and Minor Missions, September 1943-May 1945**

The Sele and Avellino drops were the last large airborne missions flown by the Allies in the Mediterranean until the invasion of southern France almost a year later. During the long interval many operations were planned. At least four of these, though they never materialized, are worthy of mention.

The first was in the Aegean Islands, an area which British Prime Minister Winston Churchill was very eager to occupy as a sequel to Italy's surrender. The chief prize and the key to all the islands was Rhodes. On 9 September 1943 the Germans on Rhodes subdued the bewildered Italian garrison before the Allies could act. How-

ever, on 13 and 14 September the British outflanked Rhodes by seizing the islands of Cos and Leros against negligible Italian opposition. The attack on Cos included a drop of 120 British paratroops by 6 Dakotas of 216 Group, RAF. Cos had one airfield and work was begun on others. Leros had a good harbor. From these bases northwest of Rhodes, Allied air and naval units could and almost did isolate the island. On 25 September Hitler decreed that the Germans must hold the Aegean. The German Air Force in the area drew heavy reinforcements from the Balkans, and preparations were made for an attack on Cos. The airfields there were neutralized by bombing. Then on 3 October the 1,100 British combat troops on the island were overwhelmed by an amphibious assault coordinated with paratroop drops near the main airfield.

Meanwhile, the British Middle East Command, very short of landing craft and with only one division available for amphibious operations, had appealed to General Eisenhower for assistance in an invasion of Rhodes. It needed another division, landing craft, and planes, including a troop carrier group which was to drop a parachute battalion on the island. On 26 September the Allied Force joint planning staff considered the question. It seemed possible that if the Germans withdrew rapidly in Italy, some resources might be diverted to the Aegean, and on 1 October staff officers of XII TCC were sent to Cairo to make plans for the airborne side of the attack on Rhodes.

However, German resistance in Italy suddenly stiffened, and Eisenhower decided that he had no resources to spare for the Aegean. On 7 and 8 October, Churchill appealed to Roosevelt. Roosevelt left the verdict to Eisenhower. On 10 October the Middle East Commander, Gen. Henry Maitland Wilson, flew to Eisenhower's headquarters outside La Marsa in a final effort to win some support. Eisenhower said flatly that Italy came first. He could not and would not do anything about the islands. That ended planning for the assault on Rhodes, although the British clung to the thought of such an operation for two months more.

The difficulties in the way of an attack on Rhodes were greatly increased by the German reconquest of Leros on 12 November. A decisive factor in this operation was the drop of a battalion of paratroops on a narrow neck of land connecting

the northern third of Leros with the rest of the island. Many German chutists landed in the sea, but the British, who had not anticipated so risky an operation, were taken by surprise. Their forces were split and the island fell after tenacious resistance.<sup>28</sup>

The German assaults on Cos and Leros are an instructive example of the possibilities of purely local air superiority. Once the fields on Cos were knocked out, the Allies had no air bases within 370 miles. Thus, although they outnumbered the GAF in the Mediterranean by four or five to one, they could not bring airpower to bear on the battle area. The German transport planes were secure from Allied air action and had only a few antiaircraft guns to contend with.

On 7 October, while the Aegean venture was still under consideration, a new mission was proposed in Italy. This was an airborne operation on the Garigliano near Sessa in conjunction with an amphibious landing near Mondragone. These landings behind the enemy lines were to isolate the right wing of the German army on the Volturno and block its retreat while Fifth Army attacked across the river. Photographs and maps were prepared, and on 12 October the 61st and 313th Troop Carrier Groups were alerted. The mission had been conceived as a paratroop drop by one battalion of the 82d Division, but on the 12th the division proposed that it be transformed into a glider operation employing 85 gliders. The change was probably prompted by news that the Nazis had strong reserves around Sessa. On 17 October the threat posed by those reserves plus difficulties encountered by the Fifth Army offensive led to cancellation of the project. Other airborne missions were briefly considered in October and November, but all died in infancy. During December 1943 planning for such missions in Italy was at a standstill.<sup>29</sup> Then at the end of the year came a new project, the landing at Anzio.

The Allies, irked by the deadlock achieved by the Germans in Italy, had considered ever since October the possibilities of an amphibious landing near Rome to outflank the Nazi Gustav line. Such an undertaking appealed particularly to Winston Churchill, who attached great importance to the capture of Rome. In a conference at Tunis on Christmas Day, 1943, attended by Churchill, Eisenhower, Alexander, and the new Supreme Allied Commander in the Mediterranean, Gen-

eral Wilson, agreement was reached on a landing at Anzio to cut the main road and rail lines running north from the German front opposite Fifth Army. Anzio was about 70 miles beyond the front and 35 miles south of Rome. In conjunction with an assault by Fifth Army, the landing was intended to trap and destroy the German forces in the Gustav line. General Alexander estimated the forces needed for the attack at Anzio as two divisions plus airborne troops and armored formations.<sup>40</sup>

On 30 December 1943, NATAF issued directives on the Anzio operation, which was given the code name of SHINGLE. In these, airborne missions employing one RCT were mentioned as a possibility. By 3 January planning for an airborne operation had begun, and Alexander requested that the 504th Parachute RCT of the 82d Division be retained in the theater for that purpose. His plea, vigorously seconded by Churchill, was granted, and on 4 January the 504th began training. On 8 January, Churchill, Wilson, and Alexander selected 22 January as D-day for Anzio.<sup>41</sup>

Plans to drop paratroops on the outskirts of Rome were quickly discarded as too dangerous. By 12 January a better plan had been worked out. According to this, 178 planes of the 52d Wing were to take off from fields near Naples with the 504th Regiment, the 376th Field Artillery Battalion, and an engineer company. They would assemble over the island of Ischia, and fly a beeline course from there to two drop zones about eight miles north of Anzio near the villages of Aprilia and Carroceto. Three planeloads of pathfinders, flown to the drop zones ahead of the main body, would guide them in.

After the drop the airborne troops would block the direct road and rail route from Rome to Anzio, thus protecting the amphibious forces and clearing the way for their advance. The troop carriers would turn out to sea north of Anzio and head straight over the open sea to fields in Sicily. Only the three pathfinder planes and damaged aircraft unable to reach Sicily would cut back over Capri to the Naples area. This proviso probably arose from the congested state of the airfields around Naples. The planners found it hard to get room there for the expedition to stage and take off.<sup>42</sup>

Briefing began for group commanders and other high officers of the 52d Wing on 12 January, was extended to squadron S-2's on the 14th, and was

given to all group and squadron staffs on the 18th. On 15 January the wing had issued its field order for the mission, which went by the code name SUN ASSAULT. On 19 January, General Williams of XII TCC went to Naples to supervise the operation. On 20 January nine new pathfinder aircraft arrived, equipped with the SCR-717-C radar which was to prove its worth in Normandy and southern France. But they went unused at Anzio, for early on the morning of the 20th orders were received from General Clark that SUN ASSAULT be canceled.\* The 504th was sent to fight at Anzio, but it went by water as part of the amphibious assault.<sup>43</sup>

General Clark's motives in canceling the drop are still something of a mystery. The most likely explanation is a statement by Maj. Gen. Edwin J. House of XII Air Support Command that Clark feared that the paratroops "would be cut to pieces by German tanks." The same anxiety certainly existed in the 504th. A feeling was prevalent in the regiment that security had been faulty and that the Nazis would be waiting on the drop zones to receive them. Nobody foresaw that when the landings took place, the surprised Germans would have only a thousand poorly equipped troops anywhere near Anzio.<sup>44</sup> Another explanation is that the mission was called off because no satisfactory time could be found to schedule it. A drop before H-hour (0200 on 22 January) was reportedly opposed as prematurely revealing the assault, while a drop after H-hour was criticized as being in danger of fire from Allied antiaircraft.<sup>45</sup> Such arguments seem feeble when it is remembered that Allied commanders in Sicily, southern France, and Normandy managed to carry out airborne operations before H-hour without sacrificing the advantages of surprise. Moreover, the risk of antiaircraft fire in a drop at Anzio after H-hour was small, since the troop carrier route avoided the convoys and the invasion beaches by several miles, and with radar to guide them, the planes were unlikely to veer off course as they had done in Sicily. A brief moratorium on antiaircraft fire like that so successfully used at Salerno would have eliminated the risk even if some planes had lost their way.

Whatever the reasons for the cancellation, both

\*MATAF knew on the 19th that the airborne operation would not take place. (Operation "SHINGLE," Operation Instruction No. 1, Hq MATAF, 19 Jan 44 in MAAF Operations in Support of "SHINGLE" in 622.430C.)

airborne and troop carrier personnel later regretted it. "In retrospect," wrote the historian of the 316th Troop Carrier Group on 22 January, "it appears that the parachute mission could have been carried out with a minimum of loss." The verdict of the 504th's historian was "... the jump would probably have gone off without a hitch."<sup>48</sup>

Suggestions that the 504th might have swept up the unguarded road to Rome can be discounted, not only because of the suicidal nature of such a dash, but also because a parachute regiment, almost devoid of vehicles, could not race 30 miles in a day. What the paratroops could have done within the limits of their mission and capabilities would have been to reconnoiter, to inform the commanders on the beaches that the way was clear, and to advance through Carroceto to the strategically valuable junction of Campoleone, about seven miles away. Campoleone was a natural bastion for the northern end of the Anzio beachhead. The Allies later paid heavily in vain attempts to take it after the Germans had established themselves there. If SUN ASSAULT had been carried out, Campoleone could have been occupied safely and cheaply.

Spring brought new plans for airborne operations. These, however, were restricted by the fact that, for reasons explained later,<sup>\*</sup> the only troop carrier units available at that time in the Mediterranean for an airborne mission were three squadrons of the 62d Troop Carrier Group.

Late in April 1944, Fifth Army included a paratroop drop in its plans for a spring offensive. The 509th Parachute Battalion, flown by the three squadrons of the 62d Group, was to make a jump in the Ausoni Mountains and cut highways in the Terracina area. The operation was intended to break up a possible enemy holding action north of Fondi. Since the Nazis made no stand in that area, the drop was not called for.<sup>47</sup>

On 6 June, as the Allies advanced north from Rome, the 509th was ordered to stand by on 48-hour notice for a drop in the Tolfa area to cut the coastal highway south of Civitavecchia. The swift Allied advance which took Civitavecchia on 7 June made that mission, too, unnecessary. Again on 15 June the 51st Troop Carrier Wing and MATAF discussed a plan to drop the 509th. This was replaced on the 16th by a substitute plan which in turn was abandoned on the 17th. That

was the last attempt to include a paratroop mission in the Fifth Army offensive.<sup>48</sup>

Eighth Army had been pushing up through the Apennines beside the Fifth. On reaching Sora on the road to Avezzano it called for a drop to harass the retreating enemy and prevent destruction of bridges between Arce and Avezzano. The mission, known as HASTY, was planned on the night of 30 May by the commanders of the British 2 Parachute Brigade and the 62d Group and A-3 officers of the group and the 51st Wing. It was carried out 48 hours later.

At 1900 hours on 1 June, 11 planes of the 62d Troop Carrier Group took off from Gaudo with 61 paratroops of 2 Brigade. They picked up an escort of 12 Spitfires over Venafrò and flew on over the mountains at an altitude of 5,000 feet in formation of 2 aircraft in trail with 5 seconds between elements. Between 2012 and 2020 they dropped their troops east of the highway 5 miles south of Trasacco from a height of 3,250 feet above sea level but only about 600 feet above the ground. To confuse the enemy, dummies were dropped half a mile south and half a mile north of the drop zone. A spatter of machine-gun fire near the drop zone was the only opposition encountered. The drop, made in the last light of a calm, hazy evening, was considered excellent, and all planes returned safely. The paratroops got off to a good start, but were overwhelmed by superior German forces a day or two later.<sup>49</sup>

Another airborne operation which was being prepared during May and early June was a paratroop drop to assist in BRASSARD, a French invasion of the island of Elba. This invasion was intended to threaten the right flank of the Germans in Italy, curtail German coastal shipping, and provide combat experience for French troops.<sup>50</sup>

By early June plans had been made for the drop of a French paratroop battalion on the night before D-day (17 June) to silence enemy batteries in the assault area. The mission was to be flown from Corsica by planes of the 62d Troop Carrier Group flying in pairs echeloned to the right and spaced at 10-second intervals. Pathfinder guidance was essential because the mission would be flown before moonrise. Accordingly, aircraft equipped with SCR-717 radar were to proceed to Elba ahead of the main formation and drop pathfinder teams with Eureka beacons and other aids on the drop zone at 0030. The paratroop bat-

<sup>\*</sup>See below, p. 78.

talion would jump at 0120, and the amphibious assault would be delivered at 0400.<sup>51</sup>

On 10 June to the indignant dismay of the French, who had rated the assistance of the paratroops very highly, General Wilson called off the drop. His forces in Italy were advancing so rapidly that they would soon be north of Elba and in a position to isolate the German garrison on the island. At the same time the advance created a need for air supply, which only the 62d Group could provide. He therefore decided against the airborne operation and probably would have abandoned BRASSARD altogether had the French been willing to let him use on the mainland of Italy the forces intended for Elba. The amphibious assault on the island did take place and was successful. However, enemy batteries, including those the paratroops had been supposed to silence, caused substantial losses to the invaders. An observer of BRASSARD reported, "Paratroops would have been quite useful in early stages."<sup>52</sup>

During the last 10 days of June, it gradually became evident to the Allied headquarters in the Mediterranean that their next task would be to prepare an invasion of southern France. The airborne effort involved in this enterprise will be discussed separately in the next chapter. It was so large as to absorb all the troop carrier units in the theater, excepting the 60th Troop Carrier Group, which was inextricably committed to special operations with Tito's partisans in Yugoslavia.

Nevertheless, late in July MATAF did plan for an airborne operation called ALBERGO, which was to drop a battalion of Italian paratroops near Spezia in aid of a strong concentration of Italian partisans. The 62d Troop Carrier Group, then in training near Rome for the mission to France, was to provide 42 planes for the lift. ALBERGO was canceled on 1 August because the Germans had dispersed the partisans.<sup>53</sup>

The airborne missions to southern France were the last such missions to be flown in the Mediterranean Theater,\* although the war there went on for nearly nine months more.<sup>54</sup> The lack of missions was brought about partly by the overriding necessity of flying troops to Greece.

During August a Russian offensive brought

\*In Operation HERRING on 20-21 April 1945, 20 planes of the 64th Troop Carrier Group did drop 220 Italian paratroops in the Po valley to harass the German retreat. However, these were not dropped as a combat unit but in single sticks to act as guerrillas in bands of 8 to 10 men.

Romania and Bulgaria to the verge of collapse. It seemed almost certain that when they fell the exposed German garrison in Greece would have to withdraw or surrender, leaving the country in chaos. Consequently, on 22 August, only a week after the invasion of southern France, Prime Minister Churchill conferred in Rome with General Wilson on measures to stabilize Greece after the German occupation ended. Churchill decided that AFHQ should immediately prepare a British expeditionary force for dispatch to Greece, and that 2 Parachute Brigade (then returning from France to Italy) should be held ready to fly in as the spearhead of this force when the time was ripe.

The 51st Wing was from the first the only likely source of planes for the lift. About the beginning of September it was directed to prepare plans in conjunction with 2 Brigade and the British Balkan Air Force, which was to control the air phase of the Greek venture. By 6 September the wing had made a plan for its airborne operation. Originally called DOGFISH, the operation was quickly rechristened MANNA, a more appropriate and appetizing title. For it the 51st Wing was to provide 100 planes.<sup>55</sup>

Since one of its three groups, the 64th, was committed to air supply of Seventh Army's fast-moving divisions in the Rhone valley, and two squadrons were needed to help the Yugoslav partisans, 100 planes were about all that the wing had to offer. (Actually, by the time MANNA took place, the wing was able to recall two squadrons of the 64th and to use on one-week loan the two squadrons working with Tito.) The 2 Brigade was the only experienced and reliable airborne unit left in Italy. Thus while MANNA was impending, AFHQ had neither planes nor troops to spare for airborne missions.

By 10 October the German evacuation of Greece was far advanced, and the 51st Wing was notified that D-day was set for the 15th. The wing hastily flew its units into position in the heel area of Italy. Next day D-day was advanced to 13 October. Then, on the 12th, eight planes of the 10th Troop Carrier Squadron acting on orders from Balkan Air Force "completely without the knowledge" of 51st Wing dropped a company of paratroops at Megara. Between the 12th and the 18th the wing flew about 224 successful sorties from San Pancrazio, Brindisi, and Manduria to Megara and Kalamaki airfields near Athens. It delivered about

2,000 troops and 327 tons of supplies. Because of demolitions and craterings only about a third of the planes were able to land. For the first five days delivery was by parachute or glider as in an airborne mission. MANNA was not a combat mission, since it was not carried out in the presence of the enemy. However, despite bad weather, limited resources, and last-minute improvisation, it was a good demonstration of the use of air transport to occupy a critical area.<sup>66</sup>

As soon as Greece seemed to be settling down, 2 Brigade returned to Italy. During October it was proposed that the brigade be used to establish order in northwest Italy as it had in Greece by landing near Turin after an anticipated German withdrawal. On 18 November, MATAF agreed to free the entire 51st Wing for this operation, which was called CINDERS. However, the Germans kept on fighting, and on 29 November, General Alexander requested permission to use the wing to lift 2 Brigade in a paratroop and glider mission to the Argenta area in conjunction with an Eighth Army offensive toward the Po. His request was granted, and 30 Horsa gliders were flown in from England for the mission. Then civil war flared up in Greece. From 2 to 4 December, 51st Wing was busy flying three British battalions to Greece. By the time troops and planes were again available, Eighth Army had abandoned its offensive and dug in for the winter.<sup>67</sup>

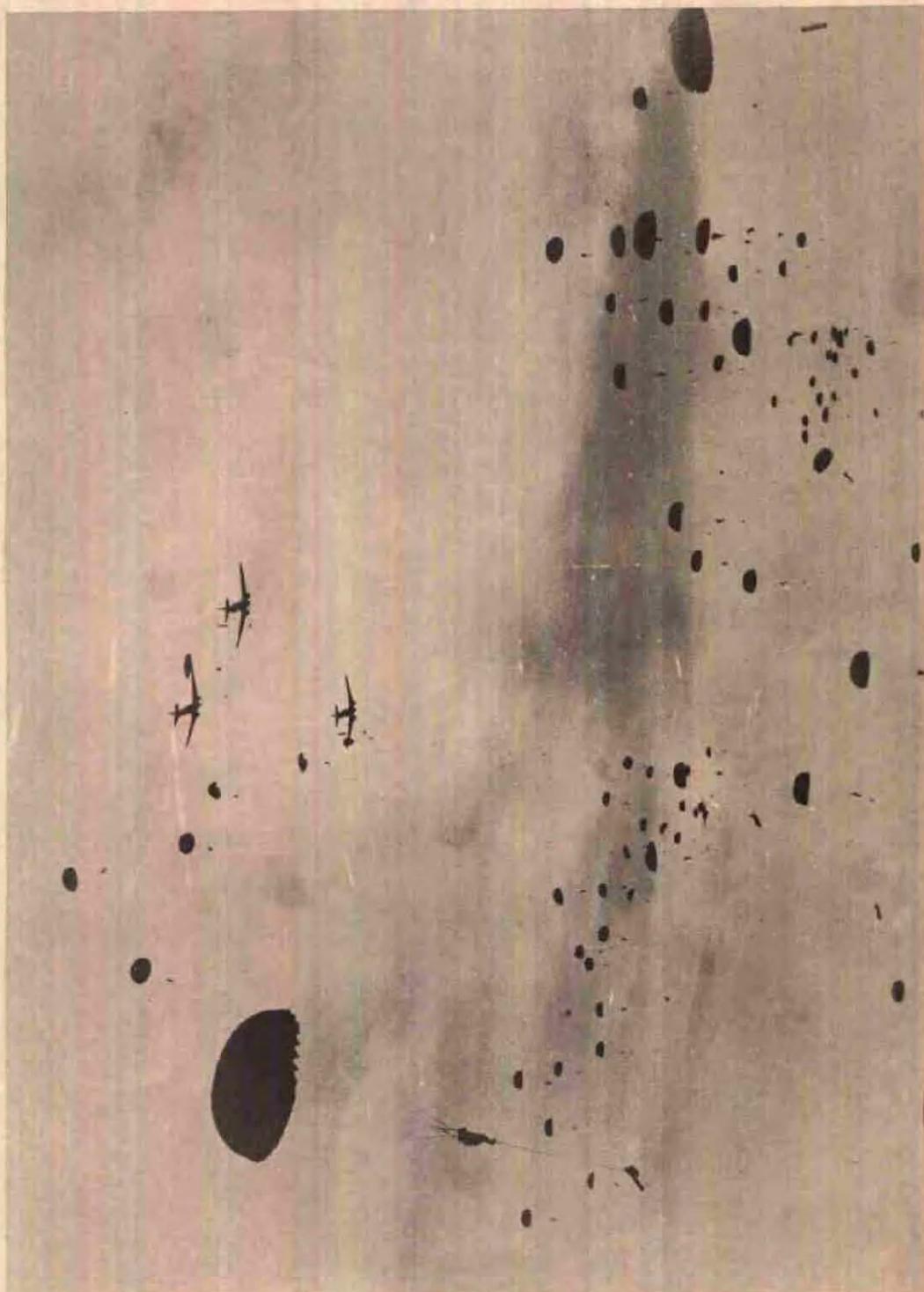
On 4 March 1945 a conference was held at 15th Army Group to consider airborne missions in support of a spring offensive. By the 20th a revival of the Argenta mission had been agreed upon, and 51st Wing was directed to prepare plans for it.

On 31 March the Wing issued a plan for EARLSDON, as the operation was called. Para-

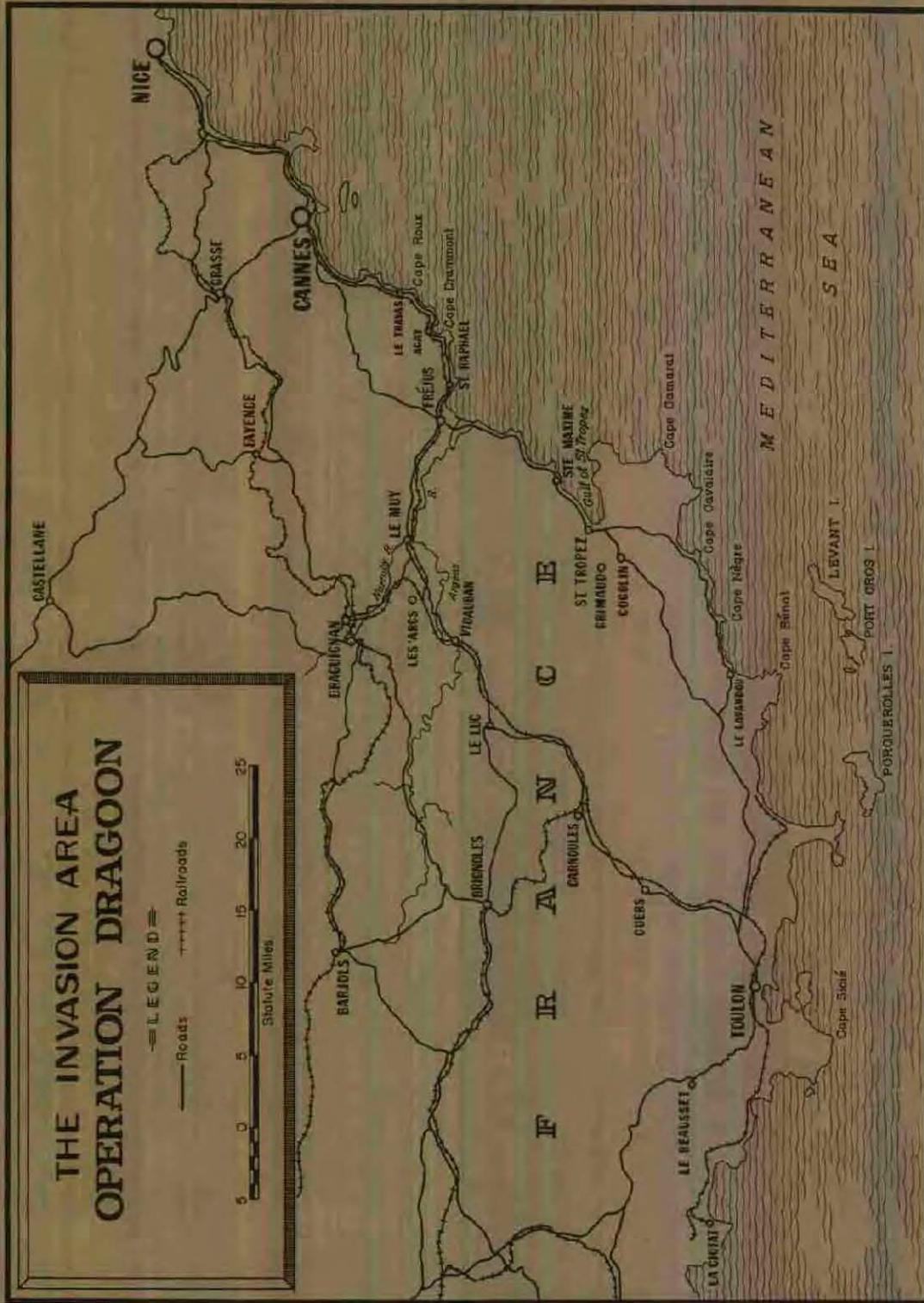
troops of 2 Brigade were to drop from 115 planes on to the northwest shore of Lake Valli di Comacchio. They would be followed by 35 Horsa gliders carrying artillery and supplies. The planes would be based in the Foggia area and would use the standard V formation for paratroops and pairs in echelon for the gliders. The force thus delivered was to cut enemy communications while Eighth Army attacked up the shores of the lake toward Argenta and Portomaggiore.

Selection of drop zones was delayed because the drop area proposed by Eighth Army was close to heavy concentrations of German artillery. The wing estimated that flak might cost it more than half the planes engaged. When Desert Air Force representatives agreed, expressing surprise that "consideration could even be given to sending in slow-moving Troop Carrier columns at 600 feet where they had hesitated to send in their own P-47's at 6,000 feet,"<sup>68</sup> Eighth Army yielded, and another area was selected. The episode is significant as illustrating a tendency of ground commanders to commit the troop carriers to impracticable plans.

The Eighth Army offensive began on 9 April and almost immediately overran the proposed drop zones. Next day a conference at Eighth Army selected new zones near Ferrara from which 2 Brigade could strike at bridges and ferries across the Po, thus isolating German forces south of the river. The mission was to be flown on the 15th. On the 13th the British were nearing Ferrara, and the mission was postponed. Thereafter, the long-delayed German collapse developed too fast for the airborne planners, and on 25 April, after abortive attempts to revise it, EARLSDON was cancelled.<sup>69</sup> A week later the war in Italy ended.



*Figure 5. British Paratroops Jump over Megara during Occupation of Greece, September 1944.*



Map 12

## The Invasion of Southern France

### Birth, Death, and Resurrection of ANVIL

EVER SINCE THE SPRING of 1943 the Allies had considered mounting an amphibious operation against southern France (ANVIL) in conjunction with OVERLORD, the invasion of Normandy. At Cairo in early December 1943 the Combined Chiefs of Staff not only decreed that ANVIL be carried out, but declared that OVERLORD and ANVIL were the "supreme operations" for 1944 with priority over all other military efforts. On 6 December, the day before the Cairo conference ended, General Eisenhower was officially notified of the decision to mount ANVIL. Unofficial notification must have come earlier, because on 4 December the planning staff of Mediterranean Allied Air Force had moved from La Marsa to Algiers to prepare the operation. It was joined there by Force 163, the name given to the ground force planners representing the Seventh Army, and by naval planning representatives.

MAAF issued a preliminary appreciation on 23 December and on 29 December sent directives to its subordinate commands, including TCC, notifying them of their responsibilities for ANVIL.<sup>1</sup> Further progress was unexpectedly hampered by uncertainty as to what kind of an operation ANVIL would be, and whether it would take place at all.

In December it had been envisaged as a two-division assault to be launched in May simultaneously with OVERLORD. However, on 2 January 1944, General Montgomery, who was to command the ground forces in OVERLORD, arrived in London, and when briefed next day, he declared that the force for the initial assault on the Normandy beaches must be raised from three to five divisions if it was to succeed. From then on he

campaigns earnestly to win the authorities in London to this view. Eisenhower, who arrived two weeks later to assume his duties as Supreme Allied Commander, supported Montgomery's contention. His influence was decisive, and by the end of January the five-division assault was approved. So scarce were landing craft that the only way to get two more divisions ashore in Normandy seemed to be to take vessels from the Mediterranean. This involved curtailment of ANVIL to a one-division assault or even its cancellation. General Eisenhower and the American chiefs of staff were at first reluctant to interfere with ANVIL, but repeated study of the problem yielded no other solution, and the needs of OVERLORD were paramount.<sup>2</sup>

The prospects for an invasion of southern France were further darkened in February by the failure of the Liri valley offensive and the sealing off of the Allied landing at Anzio. The stalemate at Anzio convinced General Wilson that a one-division assault on southern France, if opposed in strength, would, like Anzio, be a costly failure. He told his subordinate commanders on 18 February that such an assault would be out of the question.<sup>3</sup>

During the next two months it appeared increasingly unlikely that ANVIL would ever be performed.\* When on 18 April the CCS decided to postpone ANVIL indefinitely and to summon from the Mediterranean all assault craft beyond the minimum needed to lift one division, the in-

\*On 8 March Lt. Gen. Ira C. Eaker, commanding general of MAAF wrote "Practically there is no prospect for it . . .", and on 8 April Air Plans reported to the Chief of Air Staff, AAF, that ANVIL "will probably not take place." (Ltr, Lt Gen I. Eaker, CG MAAF to AM Sir J. Slessor, DC MAAF, subj: Reorganization for "ANVIL". 8 Mar 44, in 622.01; Air Plans Weekly Activity Report for Chief of Air Staff, 8 April 1944, in files of USAF Historical Division.)

vasion of Southern France seemed sunk in the limbo of pigeon-holed projects.<sup>4</sup>

Even if the very existence of ANVIL had not been in doubt, planning for use of airborne troops in the operation would have been stultified until March by ignorance of where the invasion would take place. The whole Mediterranean coast of France was considered, and the attention of the planners was occasionally diverted to such other points as Genoa and Bordeaux. At the end of February the ground forces, though they had narrowed their field of choice to the area between Nice and Toulon, had still not decided where they would strike. The jagged terrain of the Riviera played its part in discouraging planning for airborne operations. One locality after another was examined and found unsuitable. From 23 December until March, appreciations repeatedly concluded that a large airborne operation east of the Rhone was probably out of the question.<sup>5</sup>

The "large" airborne force for which MAAF found it so hard to pick a landing place was no bigger than a regiment. That was all that could be carried on the planes which would be on hand in the spring. At Cairo, ANVIL had been promised airlift for two brigades, but by January this pledge was nullified by the needs of OVERLORD.<sup>6</sup> On 8 January, XII TCC was directed to send the 52d Wing to England by 1 March and a detachment of the 315th Troop Carrier Group by 1 April. This detachment had been lent to the theater in May 1943 and had been retained there on duty with MATS. On 2 February, General Williams had suggested that the 315th be kept in the Mediterranean for use in ANVIL, but General Eaker dismissed the idea as contrary to MAAF's obligations, and both the 52d and the detachment of the 315th were sent to England as prescribed.

The few RAF transports left in the Mediterranean were considered unsuitable for airborne missions. Thus the only planes that the planners of ANVIL could count on for such operations were those of the 51st Wing, and the utmost it could do in a single mission was to carry one parachute regiment. When, at the beginning of April, 64 planes of the wing were sent on loan to Burma, the possibility of any large airborne mission in ANVIL seemed remote indeed.

If only one troop carrier wing was to remain in the theater, a troop carrier command was clearly superfluous. General Williams was called to Eng-

land to take command of IX TCC, then preparing for OVERLORD. With him went his chief of staff, A-1, A-3 and other key personnel. Between 1 and 20 February the functions of XII TCC were gradually turned over to the 51st Wing.

The wing was given troop carrier responsibility for ANVIL on 8 February. MAAF provided on 1 March that the commanding general of the 51st in collaboration with the commander of MATAF and the commander of the airborne forces<sup>7</sup> was to be responsible for organizing and directing troop carrier missions. In practice, however, the planning of troop carrier operations for ANVIL was and continued to be almost entirely in the hands of the MAAF planners at Algiers including some MATAF personnel who joined them on 17 February.<sup>7</sup>

On 3 March while the Allied commanders were preparing obituaries for ANVIL, the Seventh Army planners tentatively picked the beaches between Cavalaire and Agay as the site of their amphibious assault. Though often reconsidered, this decision was never changed. The Cavalaire-Agay area was not ideal for airborne missions, but it did contain several places suitable for drop or landing zones. Inclusion of airborne operations in ANVIL was thus feasible, and during March and April plans for such operations were worked out at Algiers.<sup>8</sup>

Meanwhile though ANVIL seemed dead, events were paving the way for its resurrection as a sequel to OVERLORD. If ANVIL took place in August, assault craft unemployed after OVERLORD could be shuttled to the Mediterranean. By that time the Anzio beachhead would doubtless have been relieved and Rome taken with time to spare for training. By then, too, the success of operations in Normandy might well have forced the Germans to divert resources from southern France and have weakened their morale. In March suggestions by the American chiefs of staff that ANVIL might be

<sup>4</sup>No such commander then existed. The commander of the British 2 Brigade was the ranking airborne officer. Excluding the 504th Parachute Regiment, which was earmarked for OVERLORD, the airborne forces then in the theater were 2 Brigade, the American 509th Parachute Battalion, and two batteries of the 463d Parachute Field Artillery Battalion. The 1st Battalion, 551st Parachute Regiment, and the 550th Airborne Glider Battalion were to arrive from the United States in April, and the 517th PCT was due in May. Hope was felt that a French paratroop regiment, then being reorganized on American lines in North Africa, might be available for ANVIL. (Lt. Col P. D. Harkins, Deputy C/S Force 163 to C-in-C AFHQ (Attn.: G-3 Plans), subj: Release of Units, 15 Feb 44, in KCRC, 7th Army Files "O-102 Special Opns.")

mounted after OVERLORD had seemed to arouse little interest. In April, General Wilson took the initiative in reviving the idea, if only as a possibility.

About 21 April, Wilson's staff informed him that after his spring offensive took Rome, he would not be able to maintain more than seven or eight divisions in pursuit up the Italian peninsula. He would need a major amphibious operation in order to make full use of his resources. Anxious not to have half of his armies idle, Wilson on 29 April appealed to the CCS to grant him landing craft enough for a three-division assault. He mentioned ANVIL as one of several possible operations, but rated it as contingent on a substantial weakening of German defenses in southern France. Besides the shipping, he also asked for enough additional airlift to carry a whole division in an airborne mission.

General Wilson flew to London on 1 May to support his request. He found Eisenhower unwilling to predict just when he could release his assault craft. However, by 12 May the U. S. chiefs of staff had promised to send 19 more LST's and 19 LCT's to the Mediterranean after they were released from OVERLORD. American interest in ANVIL was evident, but Wilson said vehemently on 15 May that he was not at all committed to the operation. The shipping had been assigned to give him flexibility, not to perform a set task. There the matter rested until the middle of June. ANVIL remained a mere possibility. Nothing definite had come of the request for additional airlift.<sup>9</sup>

On 7 June, after Rome had fallen and OVERLORD had been launched, General Wilson notified CCS that the time was ripe to prepare his expedition. On 11 June the CCS gave a firm decision in favor of a Mediterranean landing, and on 14 June they recommended that it be a three-division amphibious assault combined with an airborne mission of at least division strength.<sup>10</sup>

This approval precipitated a showdown (which Wilson had supposed could be postponed until the end of June) as to where the invasion was to strike. The British commanders in the Mediterranean conceived and favored a plan for a drive into the Po valley, to be followed by amphibious assault on the Istrian Peninsula. General Eaker and Maj. Gen. John K. Cannon, commander of

MATAF, also supported this plan. They feared the dispersion of their forces necessary for operations in southern France and felt that the GAF was still strong enough to concentrate for a formidable blow at either Italy or the Riviera. Lt. Gen. Jacob Devers, Wilson's American deputy, was the only major proponent of ANVIL in the Mediterranean. Then Generals George C. Marshall and H. H. Arnold flew to the Mediterranean to plead for ANVIL. At a conference on 17 June they stressed Eisenhower's need for a major French port, preferably Bordeaux or Marseille, for the massive build-up which he foresaw might be necessary to break a German stand on the Rhine. Perhaps better informed than the MAAF commanders on the over-all resources of the GAF, Arnold and Marshall scouted the idea that it could be a threat to ANVIL.<sup>11</sup>

Even they could not alter Wilson's preference for a campaign in Italy and Istria, and on 19 June he recommended that operation to the British chiefs of staff. That day high-level planners in MATAF wrote of action to be taken "as soon as it is decided that ANVIL is off." The visit had, however, been a striking demonstration that Eisenhower and the American chiefs of staff were once more actively campaigning for ANVIL and that the CCS might well approve it.<sup>12</sup>

Whatever his feelings about ANVIL, Wilson was eager to have an amphibious operation of some sort. The summer was advancing and nothing was settled. He therefore sent to London a mission headed by his chief of staff, Lt. Gen. James Gammell, to discuss the question with Eisenhower, and if necessary, to accept a decision for ANVIL. The outcome of the conversations was a message from Eisenhower to the CCS on 23 June recommending ANVIL as the only operation by which Wilson could give him the port he needed to deploy his forces in France. He indicated 15 August as the most desirable date and suggested ominously that if ANVIL were to be discarded, American and French forces in the Mediterranean should be moved to France. He telegraphed Wilson to the same effect. Gammell's report left no room for doubt: Eisenhower wanted ANVIL and wanted it quickly.<sup>13</sup>

Wilson gave in and told the British and American chiefs of staff on 24 June that he was prepared to carry out ANVIL on 15 August if he could get

24 additional LST's with which to land a 3-division assault force. However, he pointed out that time was short and that to meet a target date of 15 August he needed a decision from the CCS by 27 June. Instead, the British chiefs of staff, backed by Churchill, opposed the southern France operation until 1 July when Churchill reluctantly yielded to the urging of President Roosevelt. Finally on 2 July the CCS directed Wilson to launch ANVIL as soon as possible, and to make every effort to meet a target date of 15 August. They pledged him resources for a three-division assault and a ten-division build-up. On 5 July, Wilson gave ANVIL overriding priority over all other operations in the Mediterranean theater. Churchill later renewed his opposition to ANVIL, and in August last minute efforts were made to divert the operation to Brittany or Bordeaux. These efforts, however, were too late to be effective. The invasion of southern France had been assured.<sup>14</sup>

#### Planning for ANVIL-DRAGOON

Many weeks before Wilson's decision, Force 163 had worked out the main features of ANVIL, and Seventh Army's outline plan issued on 13 July set forth the operation in what, except for the airborne assaults, was essentially its final form.<sup>15</sup>

Instead of airborne troops assigned in earlier plans to drop near Cap Bénat, French commandos would land on Cap Nègre about midnight on 14/15 August to destroy coastal defenses and block the coastal road on the left flank of the invasion area. About the same time an American special service force would attack the islands of Port Cros and Levant to knock out German batteries, which might harass the invaders.

At H-hour, 0800 on 15 August, the VI Corps, commanded by Maj. Gen. Lucian K. Truscott, would make the main assault, using three American divisions. The 3d Division was to attack on the left between Cavalaire-sur-Mer and St. Tropez and take St. Tropez. The 45th was to land in the center, east of Ste Maxime, and take that town. The 36th was to take the twin towns of St. Raphael and Fréjus on the right flank of the beachhead. A French armored combat command attached to VI Corps would land to reinforce these divisions as soon after H-hour as possible. On D plus 1 the main French force, Army B, would land and swing

westward to liberate Toulon and Marseille.\* However, up to D plus 2 the task of the Allied troops was to consolidate the beachhead up to a semi-circular perimeter (Blue Line) running approximately from Cap Bénat to Theoule-sur-Mer, and extending far enough inland to include Le Muy.

The Germans had about nine divisions in southern France but only one in the invasion area. MAAF bombers were to "isolate the region as far as possible" by destroying communications. It was to be the task of the airborne missions in ANVIL to halt any German reinforcements which did succeed in approaching the beachhead from the north or west.

When, at the end of April, General Wilson had asked the CCS for enough planes to lift an airborne division, he had several operations in mind, among which ANVIL was certainly not his favorite. However, the only plans for large airborne operations known to have been on hand at his headquarters were for ANVIL.

The early airborne planning at Algiers had culminated in a plan which was presented to Wilson on 29 April. This called for a mission by the 51st Wing to drop three battalions of paratroops before sunset on D minus 1 near Collobrières, Le Luc and Le Muy respectively to intercept enemy attacks on the ANVIL beachhead from the north or northwest. A second mission on the night of D plus 1 was to drop one battalion on Cap Bénat to cut the coastal road west of the beachhead and to silence coastal batteries. The troop carriers would be based in Corsica and would follow a corridor from Cape Rosso on the west coast of Corsica to the Isle de Levant and from there to a landfall midway between Cap Bénat and Cap Camarat.<sup>16</sup>

This plan held the field until late June, partly, to be sure, because planning for ANVIL was at a standstill during May.<sup>17</sup> In view of the above situation Wilson's efforts to get enough troop car-

\*The planning of French Army B illustrates the need for good liaison in airborne ventures. Shortly after 17 June some planning was done for a drop by two or more airborne divisions, one of which would jump west of Toulon near Le Beausset. The French were informed of this, because it concerned operations in their sector. They were not given the final plans for airborne operations drawn up after 15 July because these did not directly concern them. As a result, the French outline plan issued on 28 July assumed the presence of large airborne forces west of Toulon and had to be hastily corrected on this point by General Patch. (Ltr Maj H. B. Ingram, Hq, 5 A/B Div (Plans) c/o AFHQ (Br. Sec.) to Hq Force 163, Ref:—5 ABD/MS/8 ANVIL PLAN, Hq Armée "B", 28 Jul 44; Ltr: Maj Gen A. M. Patch CG 7th Army to CG Army "B", subj: Plan Dragoon, 1 Aug 44, both in KC RC, 7th Army Files, P-14 (Plan Army "B").

riers to lift an airborne division were apparently based more on a hope of using all the airborne troops slated to be at his disposal than on any specific plan.

The endorsement by the CCS on 14 June and by General Marshall on 17 June of Wilson's request for additional air lift stimulated a new burst of planning activity. On 21 June the MATAF planners, who were particularly concerned with airborne operations, returned to Algiers to resume work on ANVIL. Since on that day the detachment lent to CBI by the 51st Wing completed its return to Sicily, they knew they would have at least a full wing available. What more they might get was still very uncertain. General Eaker, troubled by logistical problems, was quoted as saying on 20 June that only one additional wing could be supported in the Rome district, which by then was being considered as the take-off area for the mission.<sup>19</sup> By 26 June, however, he was much more optimistic. Wilson stood consistently for a loan of two additional wings. As he wrote in his message of 24 June to the British chiefs of staff:

I am prepared to carry out ANVIL with the troop carrier resources now available to me in the Theatre, but the allocation of additional list of two wings would enable me to make full use of the airborne forces now at my disposal and would materially enhance my chances of success and speed up operations.<sup>20</sup>

This view was voiced in London by General Gammell and by Brig. Gen. Lauris Norstad, head of MAAF's operations and intelligence section, and was supported by repeated telegrams to the CCS. Wilson's emissaries found the supply of troop carriers "very tight." Eisenhower, who was seriously considering an airborne operation to win badly needed ports in Brittany, was unwilling to release that much of his IX Troop Carrier Command for as long as a month or to lend them at all until OVERLORD was securely established. However, on 27 June, the day after the great port of Cherbourg was taken, Gammell and Norstad won from Eisenhower's chief of staff a pledge of 416 aircraft. The planes were to be sent to the Mediterranean for a mere three weeks, from 1 to 20 August. The loan was extended a few days later, enabling the troop carriers to leave England by mid-July. Not until 8 July were all details ironed out and a directive issued to IX TCC to send to the Mediterranean a headquarters detachment, a pathfinder group, and 2 wings of 195 planes each.

Several days earlier preparations to receive and use them had begun in Italy.<sup>20</sup>

Meanwhile, the renewal of planning for ANVIL had borne fruit on 22 June in a new Force 163 plan for airborne operations. The plan contained three alternatives dependent on the number of troop carrier aircraft available, but the gist of it was that if enough planes were obtained, the equivalent of an airborne division should be deposited by parachute and glider near three important junctions, Le Muy, Le Luc, and Carnoules, on the main highway through the Argens valley between Fréjus and Toulon. This project won general acceptance, and a revised version of it was incorporated into the MATAF outline plan issued on 8 July.<sup>21</sup>

The MATAF plan called for an airborne mission by daylight late on D minus 1, to be lifted by 394 aircraft and 30 gliders. The 2 Parachute Brigade was to drop west of Le Muy, the 517th Parachute RCT near Le Luc, and the 509th Parachute Battalion and the 1st Battalion of the 551st Parachute Regiment near Carnoules. By taking these junctions and holding the high ground north of the route, the paratroops could not only prevent German reserves to the north and west from reaching the battlefield but would also keep the way clear for a rapid advance on Toulon. Both tasks were assigned them.<sup>22</sup>

The weakness of the plan was dispersion. Le Muy was only 10 miles northwest of the coastal towns of St. Raphael and Fréjus. Le Luc was 15 miles west of Le Muy on the Toulon road and over 20 miles by road from the beaches near St. Tropez. Carnoules, some 10 miles southwest of Le Luc, was even less accessible. If Nazi resistance was vigorous, the forces at Carnoules and Le Luc might be overwhelmed before help could reach them.\* A 50-plane resupply mission scheduled for the night of D plus 2 indicates an expectation that one or more of the groups might be isolated at least that long. In approving the Seventh Army plans on 2 July, General Wilson had raised the question whether it would not be wiser to send the airborne troops against one area rather than three, but his suggestion had no immediate effect.<sup>23</sup>

The drop was scheduled for daylight because 15 August fell almost at the dark of the moon.

\*Even against the feeble resistance actually encountered, Le Luc and Carnoules were not taken until D plus 2.

Memories of the confusion caused by darkness in the HUSKY operation in Sicily were still vivid. General Wilson said that daylight was essential for the mission. General Eaker, however, felt that a daylight mission involved great risks and that a drop before sunset on D minus 1 would forfeit all chance of surprise in the amphibious landings. Thus, although the MATAF plan was approved almost without change by MAAF, the MAAF outline air plan issued on 12 July mentioned the morning of D-day as an alternative time for the airborne assault.<sup>24</sup>

The MATAF plan provided that if fighter escort could be obtained, the rear echelon of the airborne units would be flown in on the afternoon of D-day to join the troops in the drop area. Primarily a glider mission, this operation called for 325 planes and 270 gliders. Besides the resupply mission on D plus 2, tentative plans were made to use the French parachute regiment for drops between D plus 5 and D plus 10 in territory held by French resistance groups.

By 12 July, the day the MAAF plan appeared, Lt. Gen. Alexander Patch, who was to command the Seventh Army in ANVIL, had decided that the airborne operations were too widely dispersed. He announced at a conference that the airborne troops would be used "in two areas only, which were not widely separated and were relatively close to the coast." The British 2 Parachute Brigade would jump northeast of Le Muy to cut the Argens valley highway. The American airborne troops would go to a large drop and landing area midway between Le Muy and the village of Grimaud, two miles west of St. Tropez. Attacking east, north, and west from this position they were to make contact with the British paratroops, knock out coastal defenses, and serve as an advance guard covering the entire left flank of the beachhead. There is evidence that Brig. Gen. Robert T. Frederick, the newly appointed commander of the airborne troops, was instrumental in this change of plan.<sup>25</sup>

The role of the French in the airborne operations proved a perplexing problem. About 3 July Gen. Charles De Gaulle proposed Plan CAIMAN, the drop and landing of a French division, complete with tanks, in the Massif Central west of the Rhone. The British and American commanders opposed it as almost impossible to support and of no direct value to either ANVIL or OVERLORD.

Their utmost concession was a promise to consider CAIMAN after the early stages of ANVIL if circumstances seemed to favor it. Nevertheless, De Gaulle removed the French paratroops from the ANVIL troop list in order to reserve them for CAIMAN and declined to give them back.

On 15 July, General Patch asked that the two battalions in the French regiment which were qualified for a combat jump be dropped on D plus 2 or D plus 3 near Vaucluse or, as second choice, Vercors. Vaucluse, a mountain village 80 miles inland and about 40 miles east of the Rhone, was a center of strong resistance forces, as was Vercors. Both Wilson and De Gaulle's representative, Colonel Billotte, favored the project, but De Gaulle insisted that his paratroops be reserved for CAIMAN. An ambiguous situation thus arose and lasted into August, with CAIMAN still nominally under consideration while the British and Americans hoped to use the French paratroop battalions in conjunction with ANVIL. Just how the impasse was resolved is obscure, but the French paratroops were not dropped in ANVIL, and De Gaulle's stubborn insistence on an untenable scheme was a major factor in preventing their use. This was regrettable, for, as it turned out, the Vaucluse drop could have been of great help between D plus 8 and D plus 14 when the Allies were trying to cut off the German retreat up the Rhone at Montélimar.<sup>26</sup>

Just as De Gaulle's proposal was being examined, another and more significant alternative was offered to the planners of ANVIL. It came from AAF Headquarters in Washington, where increased interest in airborne operations had resulted in a report on 1 June by the AAF Board which favored bold use of airborne troops to isolate a battlefield and declared that "decisive airborne operations are now possible."

The next step was to plan such an operation, and on 26 June a plan for very large airborne and air landing operations far behind the German lines in southern France was presented to the air staff. The plan aroused such support that Col. F. S. Olds of Air Plans and Lt. Col. H. H. Fisher of OPD flew to Italy and presented it on the afternoon of 15 July for consideration by the Mediterranean commanders.<sup>27</sup> The aerial assault was to begin about D plus 10 with seizure of five airfields near Avignon by an airborne division. Three infantry divisions, drawn from those reserved for

the follow-up in ANVIL, would then be flown in by heavy bombers to the captured fields, where they were to set up a 60-mile perimeter. Once established, they could bar the Rhone valley against a German retreat. Supplies at a rate of 550 tons per day per division would be flown in from central Italy by C-47 and bomber until contact was made with the forces landed on the ANVIL beaches a hundred miles away. The operation would require an estimated 70 percent of the bombers of the Fifteenth Air Force for 30 to 60 days and also entailed postponing the return of the troop carriers lent by Eisenhower.

The plan was not favorably received. The Fifteenth Air Force objected to the diversion of its aircraft; SHAEF opposed retention of its C-47's; and Wilson, though interested, felt he could not spare the three infantry divisions. General Eaker pointed out that the Avignon airfields, being short, marshy, and, with one exception, not hard-surfaced were unsuitable for heavy aircraft. General Gammell questioned whether the airborne force could keep the Germans out of artillery range of the airfields. General Williams, who had recently returned from the UK to command the troop carriers in ANVIL, stressed the danger to C-47's in resupply missions and even to bombers coming in over hostile terrain in which antiaircraft batteries could be concentrated. Events at Arnhem were to show that Gammell's and Williams' objections were well founded. In any case, the Avignon plan was not accepted. It was just as well that no commitment was made, because the speed of the invasion rendered it unnecessary. On D plus 10 Avignon was in Allied hands and most of the German forces were north of the city.<sup>28</sup>

On 13 July in 51st Wing headquarters at Lido di Roma, Brig. Gen. Paul L. Williams, the troop carrier commander, and Brig. Gen. Robert T. Frederick, the airborne commander of ANVIL, began joint planning of the airborne missions. Highly dissatisfied with the plans prepared for them, they made sweeping changes in the drop and landing zones, the timing, and the route. The two men worked smoothly together, and by the 15th they had their operation "bundled up to the complete satisfaction of the Seventh Army and the Navy Task Force Commander" and to the admiration of General Eaker. Many details remained to be worked out, but the main features

of the airborne missions had been finally established.<sup>29</sup>

Perhaps the most important change was a decision to concentrate the airborne forces in a rough semicircle two or three miles in radius north, west and south of Le Muy. The British brigade would be dropped and landed north of Le Muy in a rolling valley of fields and vineyards. This area, DZ LZ O, was over two miles long from north to south and tapered from a width of a mile and a half on its south side to about a mile on the north. The Nartuby River ran part way along its southern boundary, and the village of La Motte lay close enough to its southwest corner to help mark it. Le Muy itself was only 400 yards south of the southern edge of the DZ, but was separated from it by the river.

The American 517th RCT was to drop and land about two miles west of Le Muy in DZ LZ A, a rectangle extending about a mile and a half from east to west and three quarters of a mile from north to south and largely made up of level, narrow fields separated by hedgerows running north and south. The Nartuby River flowed on its northern side, and several roads near its other boundaries helped to mark its location. At its northeast corner it was only a quarter of a mile from the British zone, a contiguity which was to cause some confusion in the coming operation.

In contrast to the conventional characteristics of zones O and A were those of DZ C. This zone, about two miles southeast of Le Muy, was a narrow oval a mile and a half long from east to west. Lying in a basin between two ridges with hills 1,200 feet high to the east and 800 feet high to the west, it was steep, rocky, and wooded, with only two small areas of relatively level and open land at either end. It had no easy landmarks. Experts held that a drop on it would need "pinpoint accuracy" and would in any case be "both dangerous and chancey [sic]." This unattractive drop zone was reluctantly chosen in order to place paratroops on the high ground dominating Le Muy from the south. The 509th Parachute Infantry Battalion and the 463d Parachute Field Artillery Battalion were chosen to drop there.<sup>30</sup>

Williams successfully advocated delivery of the main paratroop mission at first light on D-day, while keeping the big glider missions in the afternoon as in the MATAF plan. The success of pathfinder techniques during airborne operations

in Normandy had been sufficient to convince him that a dawn drop was feasible. If so, the timing had great advantages. The troop carriers and paratroops approaching France on the first mission would have the protection of darkness and the advantage of surprise. The troops would have time to begin operations before the amphibious assault, but the enemy would not have time enough to get set for the seaborne forces. By scheduling the rest of the operation for the late afternoon a sufficient interval was given to service aircraft and rest crews after their return from the morning mission. During that time, too, the paratroops would have time to clear the Germans from the vicinity before the vulnerable gliders arrived.<sup>21</sup> The one exception to this pattern was caused by the realization that the British paratroops would need additional artillery support early in the day. Consequently, a glider mission was included to bring in artillery shortly after 0800 hours on D-day. At that time the sun would be high, the paratroops presumably would be in command of the landing zone and the enemy would be harassed by the air and naval bombardment preceding the amphibious landings.

The routing of the operation was radically revised. Plans had been made in June to base the troop carriers in central Italy instead of Corsica, which had been the take-off area designated in the April plan. However the old corridor to France from Cape Rosso on the west coast of Corsica had not been altered. For planes based in central Italy a flight over the Corsican mountains or a detour around the island would be necessary to reach the corridor. After final rejection of Corsica as the troop carrier base, a new course was worked out. It ran in a bee-line from an assembly point at the northeast end of the island of Elba past the north tip of Corsica to Agay on the French coast, a distance of about 180 miles. The harbor of Agay made a distinctive initial point some 18 to 20 miles east of the drop and landing zones. All convoy routes ran well to the south and west of the line. Agay itself was about five miles east of the invasion beaches.

On 21 July a conference was called to deal with the problems of antiaircraft fire and aircraft control. The conferees recalled the slaughter of Allied planes by naval guns off Sicily and noted that recognition of planes by IFF had "never proved completely successful." As a remedy, they directed

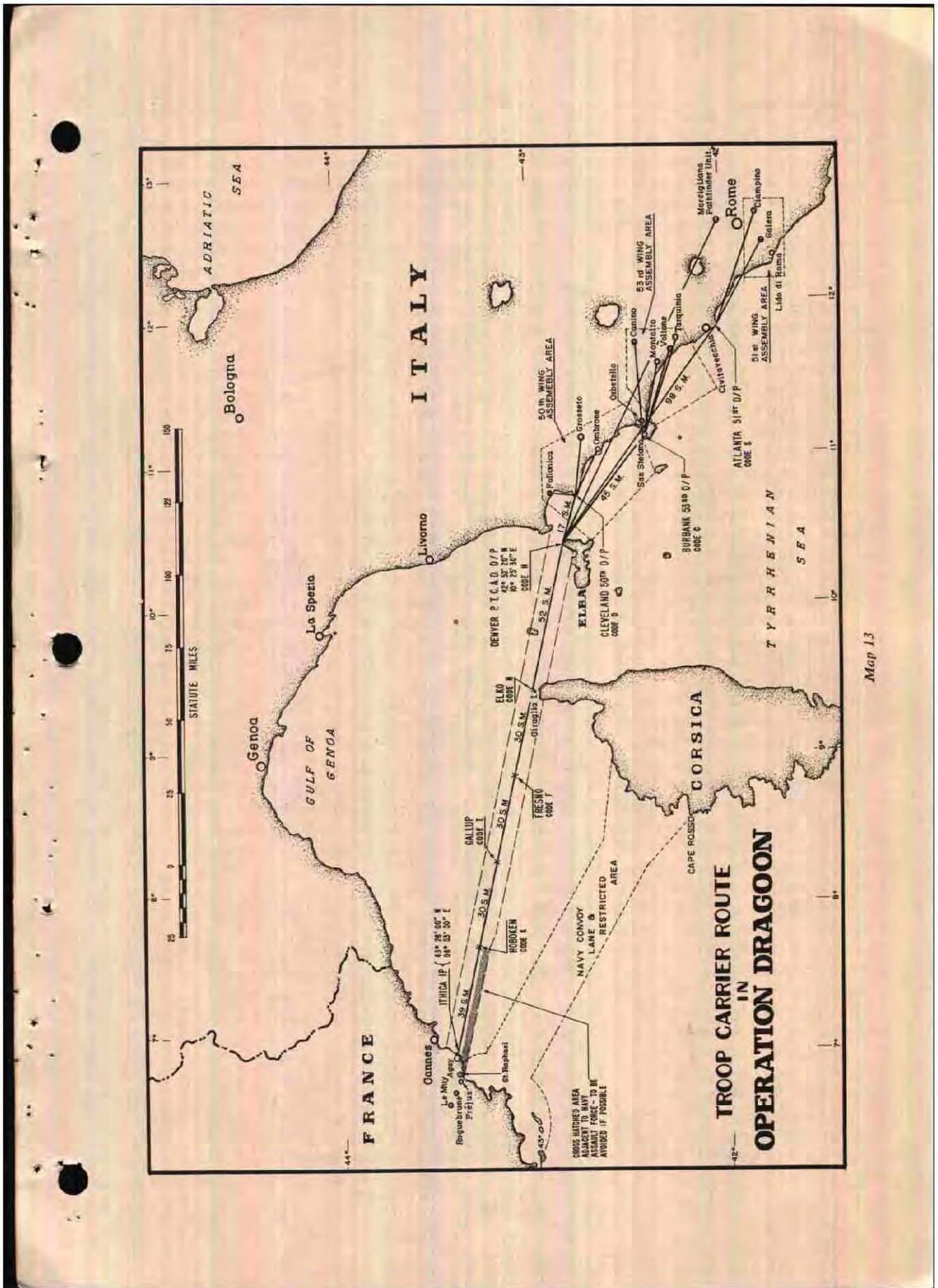
that safety corridors be established for the passage of airborne missions in ANVIL. During the period of such a mission all antiaircraft fire within the corridor would be prohibited. Notice of missions was to be given well in advance to antiaircraft gunners both afloat and ashore. Troop carrier and naval representatives promptly agreed on a corridor extending five miles on either side of the troop carrier route from Elba to Agay, except that five miles off the French coast the west side of the corridor bent slightly inward so that it touched land at Drammont just west of Agay harbor.

A slight alteration was also made in the troop carrier route. Some 38 miles offshore the planes were to turn 4 degrees to the north, making landfall at Le Trayas two and a half miles northeast of Agay. The naval commander had agreed to provide three beacon ships equipped with lights and radar. The last ship would serve as marker for the four-degree turn. These measures were taken in order that the planes would give a wider berth to the convoys off the beaches.<sup>22</sup>

By 29 July, when General Williams issued his tactical air plan, his A-3 section and Frederick's operations section, working in "complete and careful coordination" at Lido, had prepared loading plans and movement tables in full detail. A few changes were made later. For example, in the first week of August a resupply mission by 100 planes was moved from the afternoon of D plus 1 to 0814 in the morning, and between 7 and 9 August the number of Wacos in the morning glider mission on D-day was raised from 36 to 40 as additional gliders became available. The other changes in loading and timing were relatively minor.<sup>23</sup>

The plans not completed by 29 July involved such matters as fighter escort, radar, and diversionary operations. Preliminary arrangements for fighter escort had been made at Williams' headquarters on 23 July. By the 24th, MACAF had agreed to have Beaufighters from Corsica patrolling the central portion of the corridor during the night. By the 27th MASAF had promised two groups of fighters as escorts. On 31 July a meeting at MATAF headquarters in Corsica attended by representatives from Williams' headquarters and Fifteenth Air Force worked out a detailed escort and cover plan, all essential points of which were approved and later put into effect.

From 0413 on D-day, ten minutes before the



dawn paratroop drop began, until ten minutes after it ended, low-level intruders of Desert Air Force in relays of four would range the troop carrier corridor from five miles offshore to the drop area to knock out searchlights and antiaircraft batteries. During its return the troop carrier formation would be protected as far as Elba by 36 Spitfires from XII TAC flying as a rear guard at a height of 5,000 to 6,000 feet. During that mission and the subsequent airborne missions a squadron of Spitfires provided by DAF would patrol the Gulf of Genoa to intercept any fighters the Germans might send from bases in the Turin-Milan area. The morning glider mission would be escorted from Elba to France and back by a group of P-51's from MASAF, flying at 5,000 to 6,000 feet. While that mission was over France, a dozen fighter-bombers of DAF would be on hand to deal with antiaircraft batteries. The afternoon missions would be escorted out from Elba and back to it by two groups of MASAF fighters. These missions, too, would be defended against antiaircraft over France by 12 fighter-bombers from DAF. The resupply mission on D plus 1 would have a group of MASAF fighters as escort, the patrol off Genoa as insurance and, if necessary, the 12 fighter-bombers.

These decisions were embodied in operations instructions by MATAF on 7 August. On 9 August MASAF named two P-51 groups of the 306th Fighter Wing to furnish escort for the missions.<sup>34</sup>

Such extensive precautions reflect Allied estimates of the risks of airborne operations. German antiaircraft along the route was not particularly formidable, and reconnaissance reports showed that the German fighter forces within range of the troop carriers were very small. Their maximum effort on D-day was estimated as 50 fighter sorties. However, the Allies were taking no chances. They went on the principle that "a single enemy fighter could account for half a dozen transports should it slip into the paratroop formation en route."<sup>35</sup>

Radio countermeasures to conceal Allied forces and mislead the enemy were much influenced by the success of such operations in the invasion of Normandy. On 28 June, MAAF sent Group Captain Rodgers to England to learn what had been done in OVERLORD. As a result of his visit an inter-service RCM planning board was set up at MAAF on 20 July under Rodgers, and three British experts were flown to Italy to guide its

deliberations. On 25 July the board issued an outline plan. Enemy radar was to be jammed by Mandrel jammers in bombers flying at 15,000 feet about 40 miles offshore and by Mandrel stations in Corsica. A diversionary force of aircraft would drop Window in such a way as to simulate a large airborne mission and would drop dummy paratroops. Other aircraft working with a small naval force would drop Window to simulate invasion convoys.

About 28 July the La Ciotat area, halfway between Marseille and Toulon, was selected as the objective of these simulated airborne and amphibious attacks. Genoa, which before D-day had been suggested to the enemy as the invasion point, would be visited only by a token naval force. The false airborne mission was to drop its dummies northeast of Baie de la Ciotat at 0400 on D-day, just as the real mission reached the French coast. The Mandrel jamming would begin when the simulated mission was 10 miles off the coast, late enough so that the enemy radar could detect it, but too soon for the Germans to recognize its nature or pick up the actual paratroop mission.<sup>36</sup>

About the end of July one other change of importance was made. The question of whether there should be co-pilots on the gliders had been delegated by MAAF to General Williams, and he had held that one pilot was enough. The airborne troops, however, were acutely conscious that without a co-pilot, the glider would crash if the pilot were killed or badly wounded. General Frederick asked for co-pilots, and General Patch decided in his favor. There were only 374 American glider pilots in the theater and very few British. MAAF therefore sent an urgent request to USSTAF for 375 additional glider pilots. The request was granted and the 375 pilots were delivered by ATC about a week later.<sup>37</sup>

On 1 August the invasion of southern France was given a new name. The old name, ANVIL, had been in use since December 1943. Now, in the interests of security, the operation was rechristened DRAGOON.<sup>38</sup>

#### **Preparation for Airborne Missions**

On 10 July it was known at MAAF that Brig. Gen. Paul L. Williams, head of IX Troop Carrier Command, had been obtained from ETO to command the troop carriers in ANVIL. To his wide

experience in airborne operations in the Mediterranean he had recently added that gained in directing the huge missions flown in the invasion of Normandy. By the 13th he was in Italy with a staff of 20 picked officers and 19 enlisted men from IX TCC. Six or seven more officers and a few enlisted men were later attached to this staff to meet various needs, but none of these played a major role.

The troop carrier force provided for the operations in southern France was given official existence on 16 July as the Provisional Troop Carrier Air Division (PTCAD), and General Williams assumed command of it on that date. Its headquarters was set up at Lido di Roma, 18 miles southwest of Rome, beside the headquarters of the 51st Troop Carrier Wing. The headquarters was principally concerned with operations, and administrative activity was kept to a minimum. No central files were kept; much business was transacted by personal contact; and correspondence sent outside the command was sent through the message center of the 51st Wing.<sup>39</sup>

When PTCAD was created, its place in the chain of command was left obscure. Supposedly it was to be attached to Twelfth Air Force for administration and to MATAF for operations, but action to that effect was not taken until 5 August. Then the Ninth Air Force attached PTCAD to MAAF, and the Twelfth Air Force issued orders retroactively attaching to itself "IX Troop Carrier Command (Prov.)" as of 10 July for the headquarters, 12 July for the pathfinders and 16 July for the troop carrier wings. The relations of PTCAD with its subordinates were also unusual. The air units sent from England were assigned to PTCAD; the 51st Wing (minus the 60th Troop Carrier Group) and the 904th Air Base Security Battalion, which guarded PTCAD installations, were attached to it for operations; the service groups at its bases were not, strictly speaking, under its authority at all.<sup>40</sup>

On the 16th, parts of Williams' command were already in position. The 51st Wing had moved to the Rome area at the end of June. Its headquarters had been set up at Lido; the 62d Group had its station at Galera; and the 64th, after a brief delay, had settled at Ciampino. All group glider detachments of the 51st had been concentrated in May at a glider training center at Ponte Olivo, Sicily, a step very beneficial to their morale and efficiency.

On 30 June they were flown and towed to a new center at Marcigliana, Italy.<sup>41</sup>

On the morning of 18 July the 50th Troop Carrier Wing reached Italy from England with 198 planes. Each of its 4 groups had contributed 49 aircraft and 3 had been sent from wing headquarters. Except for one plane which landed in Portugal all had completed the trip. Delayed for a day by bad weather, they had left England on the night of the 16th. The 439th and 440th Groups had stopped at Marrakech. The 441st and 442d had come by way of Gibraltar. The split was dictated by the fact that neither Marrakech nor Gibraltar were prepared to service more than two groups at one time. The groups were to be based respectively at Orbetello, Ombrone, Grosseto and Follonica. The field at Follonica was completed just in time to receive the 442d. Wing headquarters was set up at Orbetello.

On 20 July the 53d Wing arrived, also with 198 planes. Its 435th and 438th Groups had used Gibraltar as a stopping point, while the 436th and 437th had rested and refueled at Marrakech. One plane had been lost in a crash at Gibraltar. The 53d Wing was based between the 50th and the 51st. Wing headquarters and the 435th Group were located at Tarquinia. The 436th, 437th and 438th Groups were based respectively at Voltone, Montalto and Canino.

Besides the two wings, 12 pathfinder planes from IX Troop Carrier Command loaded with equipment and personnel made the trip to Italy and were placed in the Rome area at Marcigliana. They had brought with them airborne pathfinder teams from the 82d and 101st Airborne Divisions to serve as instructors, and a full supply of radar and visual aids to navigation. In all, counting the 3 planes which had brought General Williams and his staff and 2 substitute planes promptly sent to replace those which had come to grief, 413 troop carrier craft made the trip from England to Italy.

The move was a remarkable test of troop carrier navigation and of the potential range of the C-47. The shortest hops were about 900 miles in length, and that from England to Marrakech was 1,400 miles long. The planes had been provided with four cabin tanks apiece to increase their cruising radius. They carried an average load of three or four passengers and a ton of luggage and equipment. The passengers included 225 glider pilots. The equipment included a 10-day level of

Air Corps supplies and six American paratrocks per plane.

All the fields occupied by the troop carriers had been designated for their use in the MATAF plan of 8 July. Except for Montalto, which had a 5,000-foot runway, all had runways more than 6,000 feet long. Tarquinia had a fine concrete runway and at Grosseto the battered asphalt runway had been well repaired. Elsewhere the 50th and 53d Wings were based at newly constructed dirt fields without any permanent facilities. Tents were used for offices and quarters, except at Grosseto where luxurious housing was provided in villas and a hotel. Some fields had just been vacated by fighter groups, and Montalto and Tarquinia continued in use as fighter bases even after the troop carriers were operating from them. There were no airfields to spare north of Rome.<sup>42</sup>

Besides the 322d Service Group, which was already working with the 51st Wing, the XII Air Force Service Command provided a service group for each of the incoming wings. The 41st Service Group had the bases of the 50th Wing in an admirable state of readiness. Williams called the performance of the 41st and 322d Service Groups "a magnificent job." The 53d Wing was less fortunate. One service squadron, the 46th, arrived at Montalto on 19 July, less than a day ahead of the wing, and had to spread its efforts over all four of the 53d's bases. The 80th Service Squadron, which was scheduled to service Tarquinia and Voltone, had been summoned from Africa by General Eaker as early as 2 July but had been delayed for lack of transportation. Not until 29 July did their advance party reach Tarquinia, and the squadron was not in full operation for another week. Some delay and inconvenience arose, but operations were hardly affected. Indeed, the 437th Troop Carrier Group at Montalto praised the 46th Service Squadron and its other service units highly and declared that the efficiency with which it had been supplied was "almost unbelievable."

The service groups and the ground personnel of the wings were greatly assisted by 150 enlisted men flown in from Africa on DS from the XII Air Force Training Command. Though originally loaned for use as drivers, they were employed for a wide variety of necessary tasks.<sup>43</sup>

While in most respects the bases were in operation within 48 hours of occupancy, no telephone system had been installed. MATAF allocated two

circuits to PTCAD, and a company of the 449th Signal Construction Battalion was assigned to put them in operation. The equipment proved inadequate and the number of signal personnel insufficient. Equipment was flown in from the AAF depots at Bari and Naples, but telephone communications between PTCAD and its eleven bases were not established until 25 July. Signal detachments of the 50th and 53d Wings were flown in by ATC to operate base communications. That of the 53d arrived on 2 August to find three aircraft radio operators and an enlisted man from PTCAD running a switchboard for the Wing, and one enlisted man from wing headquarters running a teleprinter.<sup>44</sup>

Another problem was the dust on the airfields; at Ciampino it was so thick on 29 July that it took 50 minutes for 45 planes to take off. Such conditions could seriously upset the schedule of a mission. Oil was obtained from XII AFSC and several fields were oiled by troops of the AAF Engineer Command/MTO. On D-day dust was no longer a threat to the 51st and 53d Wings, but was still troublesome on the three dirt strips of the 50th Wing. Those northernmost fields apparently had not been oiled.<sup>45</sup>

So large a force, arriving on short notice, might well expect supply difficulties. A liaison officer was sent from PTCAD to the A-4 Section of XII AFSC to handle such crises, but few arose. The kits of spare parts brought by the 50th and 53d proved ample. Other supplies were obtained through normal channels except for a few urgently needed items flown in from the United States on requisition through the AAF Service Command/MTO.

Perhaps most difficult was the supply of gasoline. A serious shortage of aviation gasoline existed north of Rome. Except for a small dump at Civitavecchia, the nearest bulk supplies were at Naples. North of Civitavecchia the railroads were unusable. The solution was to send POL in tankers to the little port of San Stefano. From there for two weeks before D-day three truck companies worked around the clock hauling gasoline in 50-gallon drums to the troop carrier bases. Carrying an average of 110,000 gallons a day, they brought in enough gasoline to fill PTCAD's needs with a comfortable margin to spare.<sup>46</sup>

The airborne task force also had supply troubles. Many units lacked proper signal equipment

for airborne operations. By direct arrangement between the airborne headquarters and PTCAD, needed items were flown in from Corsica and Oran. Emergency arrangements also had to be made to bring cargo parachutes and other equipment needed for aerial resupply into the theater by plane and boat. The last large consignment of this equipment reached the airborne force on D minus 4.<sup>47</sup>

A particularly urgent task in preparing for the airborne offensive was the securing and assembly of gliders. Plans called for the use of over 350 Waco gliders. The Mediterranean had been stripped of gliders in March on behalf of OVERLORD. Approximately 140 were on hand, but it was doubtful whether more than 100 could be made fit for combat.

Fortunately, the War Department had agreed about 23 June to send 350 gliders from the United States for ANVIL on convoy UGS 47. Had this action been delayed until MAAF and MATAF could present outline plans, few if any additional gliders could have been obtained in time for the operation. As it was, there was no time to spare. In July, General Eaker directed that glider assembly have first priority over all other air maintenance and assembly work, and that AAFSC/MTO assemble all incoming gliders as rapidly as received.<sup>48</sup>

On 4 July the AAF Service Command/MTO sent to Cercola airfield, 12 miles from the docks of Naples, a detachment of 12 officers and 536 enlisted men to receive and assemble incoming shipments of gliders. To this group the 51st Troop Carrier Wing contributed more than 30 glider mechanics to aid in assembly and four glider pilots to act as advisers, inspectors, and test pilots.

On 15 July shipments of gliders began arriving, but two-thirds of them were not delivered until the end of the month. It took intervention by the Deputy Commander of MAAF to give them a priority sufficient for prompt unloading, since Naples was jammed with high-priority cargoes. The deadline for completion was 10 August. By 9 August 327 gliders had arrived at Cercola, and all had been assembled. In addition, 19 gliders delivered to the east coast of Italy had been assembled at Brindisi. An ample supply of gliders for the coming missions had been assured. The efficient way in which the task had been handled shows how much progress had been made since

the first frantic attempts to assemble gliders for HUSKY.<sup>49</sup>

Difficulties did arise. Once again after assembly had begun essential equipment such as tensiometers had to be obtained from outside the theater. Again intercommunication sets arrived late. Because of this, and because of the lack of time for modification at Cercola, intercom sets were installed by the glider mechanics and pilots themselves after delivery to the troop carrier bases. The wiring of two-thirds of the cables had to be improvised, and the 53d Wing had to use regulation field phones and other equipment cannibalized from planes on its bases.

Installation of the reinforced Griswold nose had been given top priority among glider modifications. However, since the job would have taken 32 man-hours for every glider, a command decision was taken not to attempt it. In any case only 40 percent of the kits were on hand. On D-day many glider pilots had good cause to regret the lack of the Griswold nose.

The late assembly left a minimum of opportunity for glider training. On 24 July PTCAD had to direct that glider flight training be "held to a minimum to conserve gliders," and as late as 9 August the 62d Troop Carrier Group had only four operational gliders with which to practice.<sup>50</sup>

The 50th and 53d Wings began operations two or three days after their arrival. The 50th, being closest to the front, was entrusted with evacuation of wounded.\* The 53d handled ferrying of personnel and freight. This freed the 62d and 64th Groups to practice. They needed it. During the winter their services had been in such demand that only one or two planes were engaged in pathfinder training and as few as 4 percent of their personnel and operational aircraft were in training of any kind for airborne missions. For reasons noted in the last chapter this situation had to a great extent continued until late in June. So rusty were the pilots as a result of their long immersion in transport work that one visiting group commented scornfully after watching the veteran 62d that they "had no formation flying experience."<sup>51</sup>

The evacuation and transport duties of the 50th and 53d Wings continued through 10 August, on which date they were relieved of them by PTCAD.

\*On 23 July the 819th Medical Air Evacuation Squadron was flown to Italy by ATC to provide medical care for wounded men during air evacuation.

The workload was not heavy. Formerly handled by two groups, it had already decreased as the ground campaign in Italy slowed to a halt. On an average about 10 percent of the planes of the two wings were employed. This left ample margin for training.

The 50th and 53d Wings, fresh from OVERLORD, felt no need for practice in formation flying and kept rehearsals to a minimum. The 50th Troop Carrier Wing held a wing assembly exercise on 30 July and a simulated night paratroop mission on the 31st. The planes dropped bags with identification to show how accurate their drops would have been. On 5 August a wing assembly exercise including 45 planes from each group was flown over the route to the departure point on Elba on a schedule like that to be followed in the first mission on D-day. On 28 and 30 July the 53d Wing sent all its groups on formation flights in V of V's formation. At dusk on 31 July they simulated a paratroop drop, and on 3 August they sent out their planes in formation at night.

The two groups of the 51st Wing flew a simulated night paratroop mission on 3-4 August, carrying troops of 2 Parachute Brigade and using Rebecca, MF beacons, and lights. On 12 August the wing held a practice glider mission. Then came a final rehearsal in which, after a long flight over the sea, the lead planes dropped dummy paratroops at dawn on 13 August on a drop zone some 20 miles inland in the Sele valley. On this occasion the second serial of the 62d Group missed the IP on two passes. General Pritchard of the British paratroops complained of this performance, and General Williams chose a flight of the 435th Group, then on loan with the 62d, to lead the serial on D-day. The change proved wise, for the flight hit its drop zone on D-day with extraordinary precision and most of the serial followed it in successfully.<sup>52</sup>

The pathfinder crews at Marcigliana carried on their own training program, which culminated in actual drops of pathfinder teams.

The only rehearsal representing all elements of the command was held on 7 August. Nine pathfinder planes and from one to six serial and flight leaders from each group participated in it for the purpose of testing and practicing with the navigational aids to be used on D-day. Beacon ships, equipped with lights and radar beacons were provided to mark the course. Flight was in serials of

three. Timing and altitude were the same as they would be in the actual operation. The troop carriers flew to Ustica Island off Sicily and returned at dawn to a drop zone near Salerno. There three pathfinder serials simulated a drop. However, teams with navigational aids were already in action on the drop zone.

The Rebecca signals were picked up at a maximum distance of 42 miles but averaged only 12 miles. Many were received poorly or not at all. In the belief that this showed a need for careful tuning, all Rebecca-Eureka equipment was carefully calibrated by pathfinder personnel before the 15th. The instruments responded with effective performance during DRAGOON at an average distance of over 25 miles.

The MF beacons in the rehearsal were picked up by the radio compasses on the planes at 20 to 30 miles. Only a few serials caught the signals of the BUPS beacons used, and they did so at less than 15 miles. Most remarkable was the performance of the SCR-717-C. This new radar device, which scanned the landscape over which a plane was passing, worked well in all cases and picked up the coastline at distances up to 60 miles.<sup>53</sup>

A subsidiary object of the rehearsal was to familiarize naval personnel with the appearance of the troop carriers and particularly with their black and white markings. Two daylight formations of 36 planes were flown out over the naval corridor later in the day to help the task of recognition. Had some mischance brought the airborne missions over the convoys as in Sicily, this precaution might have proved important. Though much improved in judgment and discipline, naval gunners in DRAGOON did fire in several instances on friendly planes.<sup>54</sup>

On 23 June as a corollary to the plan to drop airborne troops in divisional strength the Mediterranean Joint Planning Staff had urged that a provisional airborne division be set up to command them. Brig. Gen. Frederick, who as commander of the Canadian-American 1st Special Service Force had had some experience in airborne operations and had led that force well in Italy, was proposed as commander of the new organization and was selected for the post early in July. On 7 July he reported to General Patch with a handful of assistants. On 10 July the operations section of his staff arrived at Naples and began study of the ANVIL plans. So few officers in the theater had

experience with large airborne operations that to fill out Frederick's scanty staff, 36 had to be flown in from the United States. They arrived in the middle of July. On 12 July, Frederick's command was activated under the title Seventh Army Airborne Division (Prov.). It was redesignated on 21 July as the 1st Airborne Task Force.<sup>55</sup>

On 23 June the 517th PCT (including the 460th Parachute Field Artillery Battalion and 596th Parachute Engineer Company), the 509th Parachute Infantry Battalion, the 463d Parachute Field Artillery Battalion, the 550th Glider Infantry Battalion and the 1st Battalion of the 551st Parachute Infantry Regiment were on the ANVIL troop list available for use in airborne missions. So was the 602d Pack Artillery Battalion, although it had not had any airborne experience. The French parachute regiment, which was also on the list, was removed by De Gaulle early in July for use in CAIMAN. The British 2 Parachute Brigade was not then on the list, though its inclusion had frequently been proposed. Wilson wanted the brigade in Italy, and its presence in ANVIL, a predominantly American operation, involved considerable problems of equipment and administration. However, after the French withdrawal the brigade was needed if the airborne troops were to block the Argens corridor in divisional strength. The greenness of the American paratroops made inclusion of the British still more important. Except for the veteran 509th and two batteries of the 463d (to which two new batteries were added), none had been in combat for more than a week or two. Therefore General Patch asked for the brigade and on 3 or 4 July the British lent it to him for use in ANVIL with the proviso that it be returned to Italy as soon as the beachhead was firmly established.<sup>56</sup>

With one or two exceptions the other units were designated between 2 July and the activation of the provisional airborne division on 12 July. None of them had had previous training for an airborne assault. An antitank company acquired from the Japanese-American 442d Infantry Regiment was a valuable addition. However, it had to be re-equipped with British 6-pounder guns, since its own 57-mm. pieces would not fit in a Waco glider. Another antitank company was to be organized expressly for use in the operation, but the time was too short to have it ready. Employment of units equipped with 4.2 inch mortars which would

fit in American gliders had been suggested in the spring as a means of defense against tanks. Two such units, Company A of the 2d Chemical Battalion, and Company D of the 83d Chemical Battalion, were placed on the list. The 887th Airborne Aviation Engineer Company was lent by the AAF, and the 512th Airborne Signal Company was activated. The designation of the 676th Medical Collecting Company on 29 July completed the roster of airborne units, although detachments of ordnance personnel and military police were also provided.<sup>57</sup>

By mid-July most of these troops were assembled in the Rome area and were engaged in a training program directed by Frederick's headquarters in conjunction with PTCAD and the airborne training center at Ciampino.

The paratroop units needed comparatively little additional training. The 509th Parachute Battalion and 2 Parachute Brigade, both veteran units, had worked with the troop carriers during the spring. The 551st Parachute Battalion had just completed a refresher course at the airborne training center and so had the 550th Glider Battalion. The 517th PCT, having been well trained for airborne operations in the United States, had been given a taste of combat in Italy and was just out of the line as was the 463d Field Artillery. As already stated, no large-scale paratroop training drops were carried out. Such parachute exercises as were held were on a token basis with the bulk of the unit simulating the drop and assembly. As in the training for AVALANCHE, time was too short to permit repacking of parachutes after a mass drop.

Except for the 550th and elements of 2 Brigade Group, the gliderborne units were completely new to airborne operations. Between 20 July and 5 August a school, staffed by an instruction team from the 550th, which had conducted glider training courses in the United States, gave them thorough training in loading and lashing combat equipment and in unloading and assembling under simulated combat conditions. The men were also scheduled to receive at least two operational glider flights apiece. This phase of the program was somewhat curtailed by the glider shortage. The only practice glider mission, that of 12 August, was on a token basis with very few gliders actually landing.

Each battalion of airborne troops had contrib-

uted an officer and ten men for pathfinder work. Four complete regimental pathfinder teams were trained. The program culminated in actual drops after which each team had to qualify by setting up its equipment within a minimum time. Small groups of paratroops were then dropped to test the effectiveness of the aids.<sup>58</sup>

Aerial resupply had been made a responsibility of the AAF in October 1943. However, until ANVIL was revived in June there was no need in the Mediterranean for aerial resupply, and MAAF had no organization to provide it. Allied Force therefore reorganized a ground unit, the 334th QM Depot Company, as the 334th QM Depot Company (Aerial Resupply) to handle the needs of the American airborne. After the British brigade had been included in the operation and it was clear that its supply and equipment would be British, Allied Force established another resupply unit, the Allied Air Supply Base (British), to provide for the brigade. Both these units were placed under Frederick's 1st Airborne Task Force, which assumed and effectively carried out the responsibility. However, when it came to review its operations, the task force recommended that aerial resupply should be entirely an AAF matter.<sup>59</sup>

Preliminary briefing of wing commanders and intelligence officers had been done at Lido a couple of days after the wings arrived. On 6 August PTCAD scheduled a briefing for wing commanders, executives and A-3's and for group commanders. On 7 August PTCAD issued its field order for DRAGOON, and on the 8th, a week before D-day, a special briefing (perhaps postponed from the 6th) was held in the presence of General Eaker. On 9 August the 53d Wing briefed the S-2 officers of its groups. Most of the groups gave instructions to squadron commanders and S-2's on the 11th and 12th and to flying personnel on the 14th. General Williams visited the groups on D minus 1 and attended many of the briefings. The group briefings were held under all sorts of conditions, outdoors, in tents, and in war rooms, one of which was hardly big enough to hold a dozen men.

Plenty of excellent maps had been provided. Photographic cover was not quite so good. Adequate obliques of the IP taken at a proper altitude were not available until D minus 1. Although detailed photographs of the drop and landing areas

were taken shortly before the operation, they were not available for briefing, and pictures taken on 28 July had to be relied on. As a result, German obstructions set up since then surprised the glider pilots and threw their landings into disorder. Only one detailed (1:25,000) terrain model was obtained, but fortunately the 50th Wing somehow got a sand table of the Le May area on a scale of 1:10,000. This model played a role of surprising importance in the drop at DZ C.<sup>60</sup>

Fair, calm weather was indispensable for the success of the airborne missions despite the progress made in navigational aids. General Frederick was instructed on 6 August to be ready in case bad weather grounded the missions, and the Allies carried out DRAGOON, to send his task force on alternative missions to the Le Beausset-La Ciotat area west of Toulon on 48 hours' notice.

On 13 August the weathermen predicted fair weather. However, the decisive forecast issued at 1015 on 14 August stated that a high pressure area over the objective might produce fog in the early morning. General Eaker accepted the risk and authorized the invasion to proceed. Responsibility then passed to PTCAD, which had power to postpone or recall the troop carrier missions if instrument conditions existed anywhere on the route. The forecast of fog was repeated, but since it was expected to be thin and of short duration, the initial missions were dispatched on schedule.<sup>61</sup>

Navigation aids were ready at the departure points of the three wings, on the northeast point of Elba, on Giraglia Island off the north tip of Corsica, and on the three beacon ships, spaced at 30 mile intervals along the route beyond Corsica. All these points were provided with holophane lights and Eureka beacons. In addition Elba had an MF beacon, and the last ship, 38 miles from Agay, had an MF and a BUPS beacon.

The Eureka proved effective at an average of over 25 miles, thus giving almost continuous radar guidance over the sea. The lights were visible eight miles and more away. The MF beacons (AN/CRN-4), received by the radio compasses on the troop carriers at 30 to 40 miles, proved helpful, since the frequency of the Rebecca-Eureka showed a tendency to drift. The BUPS beacon was inoperative.

Three sets of Gee, another navigational aid, had been flown in from England at the last minute after considerable discussion. One transmitter in

Sardinia would not work properly and was turned off. Two, installed in Corsica, went on the air at 2100 on D minus 1 and were in operation throughout the D-day missions. To be a reliable guide, Gee needed three sending stations on which to get a fix. The objectives in DRAGOON were outside the 100-mile range within which it was most accurate, and the navigators' experience with Gee was rather limited. Nevertheless, four groups found it helpful in the operation and one reported it had been essential to their success.<sup>62</sup>

The airborne diversion, a complex and delicate operation, appears to have been a success. Five C-47's of 216 Squadron, RAF, took off from Ajaccio, Corsica, at 0155 on D-day to simulate a paratroop mission in the La Ciotat area. When about 90 miles from La Ciotat they set their course for it, and quartermaster resupply crews of six men aboard each plane began dropping Window from the emergency exits. The aircraft flew at five-minute intervals, and chaff was dropped in such a way as to suggest to enemy radar a formation of five serials, the lead planes of which were five minutes apart. Although they had to rely on dead reckoning most of the way, the pilots made landfall exactly on course. Meanwhile, a naval force aided by three Window-dropping Wellingtons of the RAF was simulating a convoy 8 miles wide and 12 miles long steaming into the Baie de la Ciotat. The enemy radar station on Cap Sicie had been carefully left intact by MAAF bombers so that it could record this seemingly formidable threat.

At about 0330 the naval contingent deployed as if for an amphibious assault. This maneuver caused some confusion, but succeeded well enough to preserve the deception. Between 0349 and 0419 the five C-47's simulated a paratroop drop on a DZ between Rougiers and Signes about 15 miles north of Toulon. Flying at the height and speed usual in authentic missions, namely 600 feet and 110 miles an hour, they dropped pintails, rifle simulators, and 300 rubber dummies. Enemy opposition was limited to scattered small-arms fire.

This feint, immediately before the mass drop at Le Muy, appears to have been successful in throwing the Germans off balance. Reports that thousands of paratroops were dropping west of Toulon were made over the German radio and went uncorrected for five hours. The first German

communiques also gave erroneous reports as to the Allied landings.

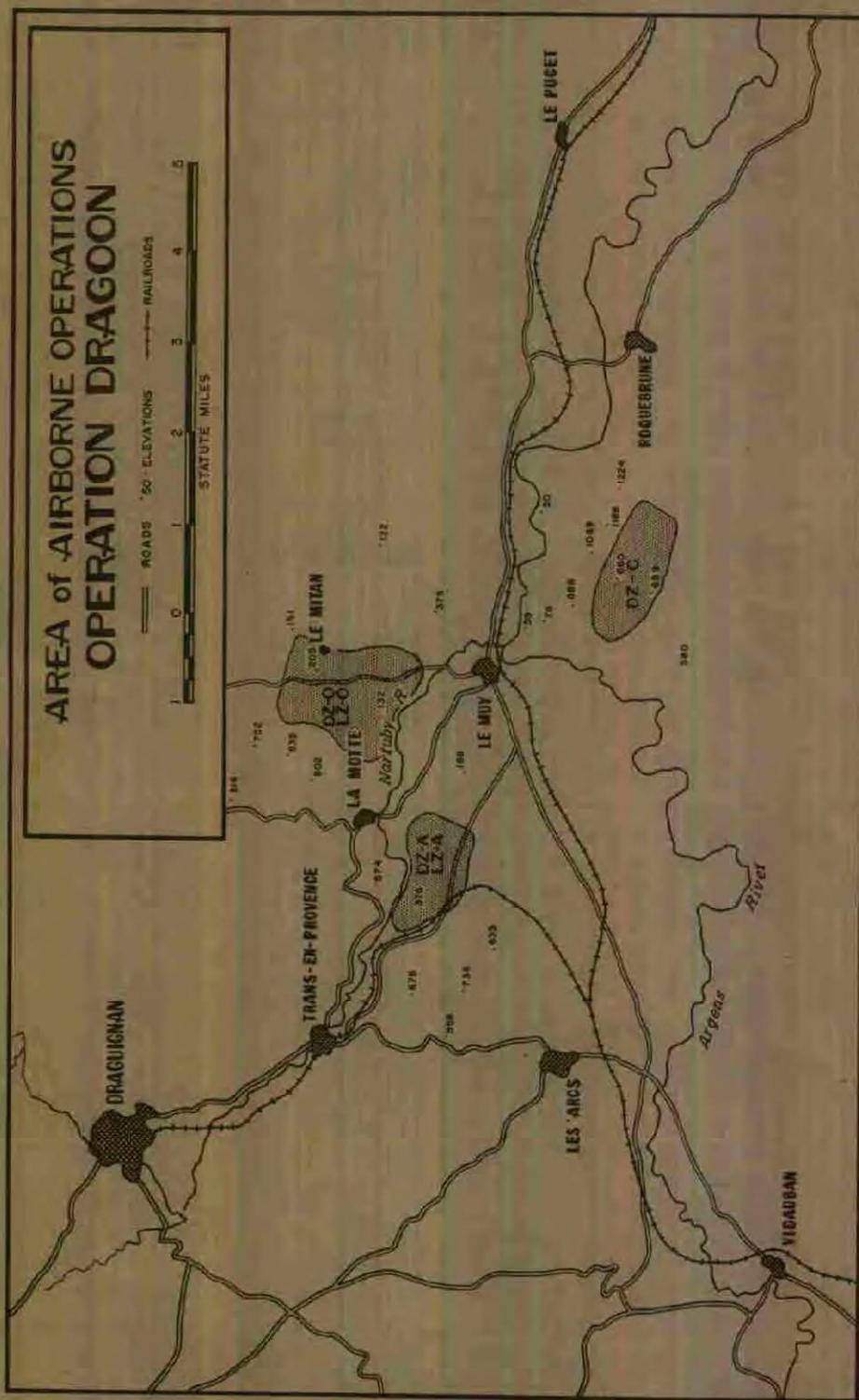
It is doubtful whether the diversion was of much immediate assistance to either the airborne or the amphibious landings. Its chief value lay in discouraging the rapid deployment of German troops and planes which were outside the invasion area to meet the situation. MAAF bombings had so shattered German communications that even when the Nazi forces in the path of the assault knew they were facing the Allies' main effort, they could not get word through to higher headquarters. The German commanders, perplexed by scanty and conflicting reports, moved slowly and committed their troops piecemeal.

No German reinforcements reached the beachhead. The interdiction campaign waged by MAAF had been so effective that few could have reached it. The Germans could, however, have massed around Marseille and Toulon and perhaps held them for months as they did at Brest, or they could have put several divisions in position to check the Allied advance northward as a small rear guard actually did temporarily in the battle of Montélimar. Instead, they hesitated and lost the opportunity to take either course.<sup>63</sup>

### **The Airborne Missions**

The airborne invasion began about 0100 on D-day when 9 pathfinder planes carrying 121 pathfinder troops took off from Marcigliana. They flew straight to Elba and from there proceeded at 150 miles an hour over the route prescribed for the troop carrier missions. They flew in three serials of three planes each with five-minute intervals between serials. Each serial had been assigned to a separate drop zone. Aboard every plane was a self-contained team of from 11 to 14 troops equipped with beacons and lights with which to mark the zones during darkness and fluorescent panels for use by day. One such team would be sufficient to provide a zone with radar and visual aids. Enemy interference on the DZ's was to be signalled by firing Very lights.

Favored by good weather, the pathfinders reached France exactly on schedule and approximately on course. However, over the coast of the Riviera they encountered a blanket of fog through which they had to grope by dead reckoning, supplemented by vague relief maps of the passing



Map 14

terrain shown on the scopes of the SCR-717-C. A reconnaissance plane had been sent over the invasion area on 7 August, and photographs had been taken of the images formed on its SCR-717-C. These photographs the pathfinders now attempted to use to guide them.

In spite of this help, the lead serial, supposed to drop teams from the 509th and 550th Battalions and a team from the 551st Regiment on DZ C at 0323, lost its way, circled back to the sea and made a second run. After about half an hour of circling one plane dropped its troops and went home. The other two aircraft separated soon after that, and one dropped its team about 0400. The last team jumped about 0415 on the sixth run made by the pilot at his elusive target.<sup>9</sup> Although each drop was made separately, all three teams of airborne troops landed in the same general area, a wooded and mountainous region between Frejus and Grasse from 10 to 15 miles east of DZ C. Some peculiarity of the landscape may have deluded the navigators into thinking they were over the drop zone. Two were sure they had dropped in the right place. Lost in the woods and far from their objective, none of the three teams were able to reach the Le Muy area in time to act as pathfinders or even to take part in the fighting there.

The second serial was to drop its troops, a platoon of the 517th PCT, at 0330. The actual drop was made at 0328. The platoon landed in woods three and a half miles east of DZ A and just east of Le Muy itself. Evidently the pilots were very close to the proper course and schedule, and a drop two minutes later would probably have been successful.

Instead the paratroops, thoroughly lost, had to wait for daylight to reveal their location. Before they could move the Germans attacked them, and much of the morning was spent in beating off their assault. Finally, with the aid of a British officer the pathfinders did make their way around the northern outskirts of Le Muy to DZ A. They arrived about 1630 and set up a Eureka, an MF beacon, and a panel T. Thus, though they had missed the paratroop operations in the morning, they were able to render substantial assistance to the afternoon missions.

The third pathfinder serial carried the British 1

<sup>9</sup>These are the times reported by the airborne. Two of the three drop times given in the PTCAD report are clearly incorrect.

Independent Parachute Platoon. This it dropped on DZ O at 0334 exactly as scheduled, a notable feat of navigation since the drop zone and all the land for miles around were invisible. One team came down within 100 yards of its objective. Assembly on a foggy night naturally proved difficult. However, the fog shielded the paratroops from enemy eyes, and they found a friendly French farmer to guide them to the exact spot near Le Mitau where they were to set up their equipment. By 0430 they had two Eureka beacons in operation about 300 yards apart along the axis of approach. They also set up two lights, but these were for assembly purposes. The fog made them invisible from the air. Twenty-four minutes remained before the first serials of assault troops were to arrive over DZ O. The hour and twenty minutes allowed for assembly and setting up equipment had proved sufficient.<sup>14</sup>

PTCAD and AFHQ both reported that the pathfinder operation was a complete success, and their assertion has been generally accepted.<sup>65</sup> As has been shown, this view is seriously incorrect. In fact, the pathfinder mission was less than 50 percent effective. On one of the three zones navigational aids were established according to plan. Pathfinder troops for a second zone were dropped prematurely, but near enough to have aids in operation for some missions late on D-day. The serial intended for the other zone became lost and missed its mark by more than 10 miles.

This indicates that even the best pathfinder pilots and navigators (and these were the best the Allies had) were likely to err. The SCR-717 was useful, but over land its image was difficult to interpret. Gee, even with one station missing, had helped the pathfinders but had not saved them from error. The problem of ensuring accuracy remained to be solved.

Following the pathfinders came the dawn paratroop mission, ALBATROSS. This crucial initial assault was to be flown by 396 planes carrying about 5,600 paratroop infantry and artillerymen and over 150 pieces of artillery (counting the heavy weapons of the infantry units).<sup>†</sup> Excluding 75 aircraft awaiting the morning glider mission,

<sup>†</sup>The 50th and 53d Wings dropped 3,928 men in ALBATROSS. Less conclusive data on the 51st Wing indicates it dropped about 1,700 men. (Hq IX TCC, Statistical Report of Operation "DRAGOON," 13 Sep 44 in 546.542F; Hq MATAF, Report on Operation DRAGOON, Ann-D, 1 Nov 44).

PTCAD had in reserve only 55 planes, about 10 percent of its strength.

The planes in the mission were divided into 10 serials, of which the first 6 contained 45 planes each, the seventh and ninth 36, and the eighth and tenth 27. They would fly in nine-ship flights in V of V's formation. From front to rear the planes of an element were to keep 100 feet apart. The interval between elements was to be 200 feet, and that between successive flights was to be 2,000 feet. A five-minute interval was to be maintained between the lead planes of each successive serial after passing the wing departure points.

Flight from Elba to France was to be at an altitude of 2,000 feet and a speed of 140 miles an hour. Between the IP and the drop zones speed would be cut to 125 miles an hour. The drop would be made at less than 110 miles an hour from a height of 1,800 feet above sea level at DZ C and 1,500 feet at the other drop zones. It was emphasized that all stragglers would proceed to the drop zone, that all paratroops would be dropped as near their destination as possible, and that no evasive action was to be taken after passing the IP.

Navigation lights were to be turned off at Elba. Amber downward recognition lights would be on as far as the last boat. Then they would be put out and the formation lights dimmed. Standard recognition procedure was to be followed. All planes were easily identifiable by black and white stripes running from front to rear under the wing and the rear of the fuselage. The units from England had come so marked, and late in July to get conformity similar markings were put on the planes of the 51st Wing.

Use of IFF had been perhaps the last detail settled. Originally, it was to be used beyond the last boat. Then it was to be off in that area during the paratroop mission but on all the way in later missions. Finally on 12 August in accordance with a MATAF directive PTCAD had ruled that the lead aircraft in each flight in the paratroop missions and one in every eight in the glider missions would use IFF all the way, and that all stragglers should use it.

All aircraft were equipped with Rebecca, but only the lead ship in each flight was to use it. In emergency the wing man would serve as standby, and stragglers were authorized to use their sets to guide them. The SCR-717, a scarcer item, was to

be operated by the leader of each serial with his wing man as standby. The lead ship in every three-plane element was tuned in to the command frequency on its W/T set. Over this PTCAD had arranged to give, if necessary, the signal for recall.<sup>66</sup>

The first group to take off was the 442d at Follonica, the northernmost field and the nearest to Elba. Its 45-plane serial, designated to lead the mission, took off between 0150 and 0208. Within an hour serials of equal size had been sent aloft by the other three groups of the 50th Wing. The 440th Group got its planes in the air in 13 minutes, the best time made by any of the serials. The 439th, hampered by dust at Orbetello, took 30 minutes (0225-0255) and had one plane crash during take-off.<sup>67</sup> One aircraft of the 441st was damaged on take-off by a released paratroop and had to turn back. The four groups left Point Ala, the 50th Wing departure point, in reverse numerical order at five-minute intervals and headed for Elba, 17 miles away.<sup>67</sup>

While the 50th Wing was taking off, the 53d had dispatched one 45-plane serial drawn from the 437th Group at Montalto and another from the 438th Group at Canino. By 0243 all planes of both serials were in the air. About 0300 the 437th passed the 53d Wing departure point at Cape d' Uomo and followed by the 438th headed for Elba, 45 miles away. Their arrival was timed to bring the 437th over the island five minutes behind the last serial of the 50th Wing.

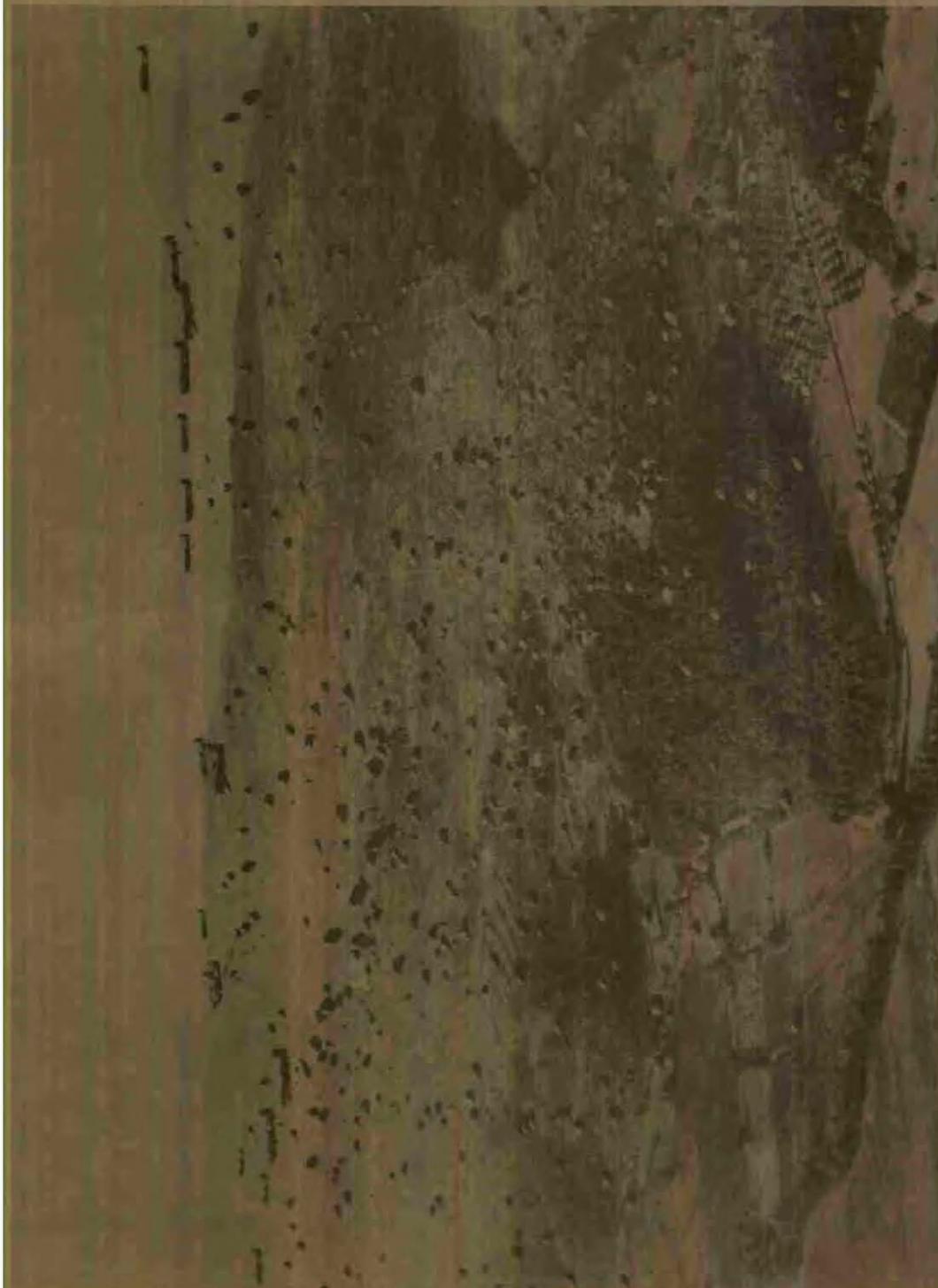
Almost simultaneously with the 53d, two groups of the 51st Troop Carrier Wing had taken off from the Rome area. The first plane of the 64th Troop Carrier Group left Ciampino airfield at 0211, and the 62d at Galera had a plane in the air at 0214. Each group sent 2 serials, a lead serial of 36 aircraft and a second of 27. Leading the second serial of the 62d was the flight loaned by the 435th Group. Another flight contributed by the 436th Group. The lead serial of the 62d flew with the 64th. The lead serial of the 62d reached Cape Linaro, the wing departure point, at about its scheduled time of 0248 and headed up the coast for Elba, 93 miles distant, with the other 3 serials in its wake.<sup>68</sup>

The 10 serials were scheduled to leave Elba at five-minute intervals between 0258, departure time for the 442d Group, and 0343, when the last

<sup>68</sup>Its load was carried to France by the 439th in the afternoon glider mission.



Figure 6. Paratroops Ready for Jump during Invasion of Southern France, 15 August 1944.



*Figure 7. Paratroops Jump near Le May in Southern France, 15 August 1944.*

serial of the 64th would pass the island. The timing proved to have been sound, and the gigantic formation, extending more than 100 miles from end to end, set out with a minimum of confusion.

The night was calm. Visibility over the sea was good, though there were scattered clouds and the moon was a mere crescent. The navigational aids worked well. The SCR-717 picked up the shore line plainly as far as 90 miles away and was a great help in making landfall at the IP. It was also of some assistance in keeping the serials properly spaced.

As far as the IP all went smoothly. Neither enemy aircraft nor Allied convoys troubled the even tenor of the flight. Many of the paratroops slept during the journey. Then, just off the coast, the pilots sighted the fog, a heavy blanket variously estimated at from 500 to 1,000 feet thick. This was most serious for the groups headed for DZ's C and A, since they would have to make their drops without benefit of pathfinder assistance.

The first two serials, drawn from the 441st and 442d Groups, were to drop on DZ C a 1,200-man team made up of the 509th Parachute Battalion, the 463d Field Artillery Battalion and a platoon of engineers. The drop zone was invisible in the fog; the SCR-717 of the lead ship failed; and no signal was received from the pathfinder troops who at that moment were wandering in the woods between Fréjus and Grasse. In this dilemma the 442d Group was saved by its assiduous practice with the sand table. The jagged hills surrounding DZ C projected above the fog, and their resemblance to the model was evident. Estimating their position by the hilltops the group dropped their paratroops at 0421. All but three or four sticks landed within half a mile of the drop zone. This achievement of the 442d deserves more credit than it ever received. No other group in the whole course of the war made so accurate a drop under such difficult conditions. In spite of the fog and the rocky ground only 20 men out of about 600 were injured in the drop and only two were seriously hurt. It should be noted that this low casualty rate was incurred on a very calm night with winds less than six miles an hour.

The 441st Group had failed to make contact with the 442d over Elba. It set its own course and went astray. Confused by the clouds off the coast, the group failed to realize its error and ordered its passengers, B and C Companies of the 509th and

B and C Batteries of the 463d to jump over St. Tropez, a coastal town 10 miles from the drop zone. Besides being inaccurate the serial was badly dispersed. About half the troops were scattered in small groups on fields, vineyards, beaches and rooftops over an area of several miles. Two sticks came down in the sea, but only about 15 other paratroops out of some 600 dropped were jump casualties.<sup>69</sup>

The next four serials were to drop the 517th Parachute Infantry Regiment and the 460th Field Artillery Battalion on DZ A. The 440th Group, flying in the lead, located the DZ on the scope of its SCR-717 after failing to get a signal from the pathfinders. At 0431 it dropped 720 men of the 2d Battalion of the 517th. The drop was widely dispersed. About a third of the troops landed near enough to the DZ to assemble and move against their initial objectives, but only about 300 were in position with the battalion 24 hours later.

The next serial, flown by the 439th Group, dropped the 3d Battalion of the 517th blindly under what were conservatively called "difficult" conditions. The battalion descended in three groups, three or four miles apart, around the town of Fayence, some 15 miles from the drop zone. After strenuous efforts it assembled 90 percent of its men and equipment and set out by forced marches to join the regiment.

After the 439th came the 437th Group with the 460th Artillery aboard. The group reported seeing lights on the DZ, possibly improvised signals made by men of the 2d Battalion of the 517th. In any case, part of the serial did drop near the DZ. The battalion had 6 howitzers in position before daylight and 11 howitzers and a fire-direction center in operation by 1100. A twelfth gun arrived in the afternoon. However, the troops in 20 planes had jumped 4 minutes too soon, following the lead of men on the No. 2 plane who had mistaken the red warning light for the jump signal. As a result at least 100 men and 4 guns did not rejoin the battalion until after D-day.

The 438th Group, the last in ALBATROSS to drop on DZ A, made its drop at 0453 through dense fog by "717 and dead reckoning." Although its first reports indicated that it had dropped the 1st Battalion of the 517th within a mile and a half of the DZ, most of the troops had come down several miles from the zone. By the morning of

D plus 1 the battalion had assembled only 150 of its personnel.<sup>70</sup>

Up to this point the operation had been conducted without pathfinder assistance. On DZ O, where the 62d and 64th Groups were to drop 2 Brigade, the situation was very different. Arriving on schedule at 0454, the first serial of the 62d found the Eureka beacons in operation and dropped its troops through the fog from 1,500 feet at about 100 miles an hour. The concentration of men on the drop zone was excellent. Even better results were achieved by the second serial, which arrived five minutes later, led by the flight from the 435th. It ran in on the Eureka and dropped so accurately that Generals Pritchard and Downes landed within 30 feet of the T and close to the site selected for their command post, and were joined there within five minutes by General Frederick. Pilots and navigators agreed that it would have been "impossible to hit the DZ without the Eureka."

The first serial of the 64th Group arrived at 0505 and "pinpointed" the DZ with the aid of the Eureka. However, at least four stragglers dropped their sticks as much as 20 miles from the objective. As the second serial of the 64th arrived at 0514, the fog cleared enough to allow some visual assistance in locating the drop zone. The results were considered good. Even so, much of the 64th, and perhaps some of the 62d, had gone sadly astray. Part of the 5th battalion of 2 Brigade had jumped near Fayence. Many other British paratroops had been scattered for miles around. When the returns were in, 2 Brigade reported that only 73 of the 126 planes lifting it had found the correct drop zone. Supplies, of course, were also scattered, and because of mechanical failures and mishandling the 64th Group brought back no less than 29 of its cannisters. However, this was insignificant compared with the failure to get a higher degree of accuracy.<sup>71</sup>

After dropping their loads, all serials made a 180° turn to the right, crossed the coast a couple of miles northeast of Le Trayas, and returned as prescribed over the route by which they had come at a height of 3,000 feet and a speed of 150 miles an hour except for the 18 planes lent by the 53d Wing to the 51st. Those returned directly to their home fields, Tarquinia and Voltone. The first plane of the 440th Group got back by 0607, and the first from the 442d reached its base at 0610.

The mission was completed at 0733 when the last plane of the 62d Group hit the runway at Galera. All planes returned safely. Occasional small-arms fire and a few machine-gun bursts had put bullet holes in two aircraft and wounded about a dozen men. No enemy aircraft appeared, and the Spitfire escort, which made its appearance on the return trip, had nothing to do.

Fewer than 40 of the paratroops had been brought back, almost all because of wounds or trouble with equipment. After interrogation and breakfast most of the crews hastened to catch a few hours of sleep before setting out on the afternoon glider mission.<sup>72</sup>

In some ways ALBATROSS was an admirable achievement. Thanks to good planning, favorable conditions, the ability and experience of the pilots and the special rehearsing of the 51st Wing, most of the huge force had completed their long night-flight as far as the IP on course, on schedule, and in formation. Enemy action was insignificant. The one obstacle which transformed the mission from one almost 100 percent effective to one about 50 percent effective was the fog which shrouded the approaches to the drop area. The six serials slated for DZ C and DZ A, at which there were no pathfinders, had to make their approach by dead reckoning, supplemented by knowledge of the terrain and such use as they could make of the crude pictures shown on the scope of the SCR-717.

Under these conditions their best efforts were not very good. Against the remarkable drop made by the 442d Group must be set the fact that the 441st, the 439th, and large segments of the other three groups missed the mark by many miles. At best the six serials without pathfinder assistance dropped less than 110 planeloads, 40 percent of their total, within a mile of their drop zones. The beacons set up on DZ O by the pathfinders made possible much better results, but even there only 73 planes, about 60 percent, made accurate drops.

These figures stand in startling contrast to official reports hitherto accepted by AAF historians that the paratroop drops were 85 or 90 percent accurate.<sup>73</sup> PTCAD made its report on 22 August, flew its IX TCC constituents back to England between 23 and 27 August and dissolved on 25 August. Thus the PTCAD report was of necessity compiled before the airborne task force had time to get adequate reports on where its men had

dropped. Another reason that the early optimistic estimates went uncorrected seems to be that after August the location of the airborne units made it very difficult to collect and collate information. The Americans were fighting in the French Alps, and 2 Brigade had been returned to Italy.

The morning glider mission, BLUEBIRD by name, was to be flown by 35 aircraft of the 435th Troop Carrier Group towing Horsas and by 40 planes of the 436th Group with Wacos. It was intended to provide artillery support for the British paratroops.\* The gliders were to fly over the same route and use the same beacons as the paratroop mission. Fluorescent panels would be laid out to form T's at the center of each landing zone. Smoke bombs at the base of each T would be used to show the direction of the wind. Each zone would be divided into quarters and numbered with Roman numerals made of fluorescent panels. Red panels and green smoke would be employed on LZ O. Yellow panels and blue smoke would be used on LZ A.

The formation to be flown was a column of fours in pair of pairs echeloned to the right. The planes in each pair were to keep 100 feet apart. Every pair would fly 300 feet from the pair beside it. Every plane in the column behind the leaders was to stay 1,000 feet behind the glider of the plane ahead of it. The speed prescribed was 120 miles an hour. Because of the terrain, the Waco gliders would be released at a height of 1,000 feet, somewhat higher than the ideal but low enough for quick landing. The massive Horsas would be released at 1,500 feet. All the Horsas were manned by British glider pilots. The planes would return at an altitude of 3,000 feet and a speed of 150 miles an hour.<sup>74</sup>

The Waco payload was limited to 3,750 pounds. The maximum payload of the Horsas was set at 6,900 pounds, and they were loaded to the limit. A C-47 was barely able to tow a Horsa, and the effort caused heavy fuel consumption; consequently, C-47's had not been used to tow the big gliders in the Mediterranean. But OVERLORD had demonstrated that it was feasible to do so.

The 435th Group with its Horsas took off on schedule from Tarquinia between 0518 and 0550 and crossed Cape d' Uomo about 0612, followed

some eight minutes later by the 436th from Vol-tone. One plane in the 436th had to return with engine trouble.

The Horsa serial had passed Corsica when it received a radio message from PTCAD's station directing it to return to Tarquinia or, if fuel was low, to Corsica. Fog still curtailed the landing zones, and the 435th would not be able to wait for it to clear. The planes had barely enough fuel to carry out the Horsa mission as scheduled. One plane with engine trouble and another which was short of fuel released their gliders, both of which landed safely on Corsica. The rest returned to base. After hasty conferences General Williams, Colonel McNees of the 435th and Colonel Beach of the airborne troops reached a decision to try again in the afternoon and launch the Horsas over the LZ at 1800, ten minutes ahead of the first afternoon missions.

The 436th Group circled for an hour waiting for the fog to clear. Finally, at 0926 it released over LZ O 33 Waco gliders loaded with half of the 64th Light Artillery Battalion and some headquarters personnel. One glider had disintegrated in mid-air above the sea killing all aboard. Another had broken its rope and landed in the Mediterranean without loss of life. A substitute sent in place of the plane which returned with engine trouble had seen the Horsa serial returning and had likewise returned in the belief the mission was cancelled. This plane and glider later completed their mission with one of the afternoon serials. Since the task force reported that at noon seven gliders of the serial were unaccounted for, four other gliders must have landed well outside the Le Muy area.<sup>75</sup>

In considering how the airborne troops, brought in the morning missions, fared during the day, it is convenient to deal first with the situation at DZ C. There the 442d Group had deposited two companies of the 509th Infantry Battalion and two batteries of the 463d Field Artillery. Their mission was a defensive one, to hold the heights south of Le Muy and to block a secondary road running from Le Muy to Ste Maxime. At first they could find very little of their equipment. The bundle-lights had not worked, and much materiel had landed in trees. However, after sunrise it was quite easy to locate the bundles and pick them off the low, sparse scrub. Before nightfall about 60

\*BLUEBIRD actually delivered 373 troops, mostly artillerymen, 34 pieces of artillery and 55 vehicles. (Hq IX TCC Statistical Report for Operation "Dragoon," 13 Sep 44).

percent of the supplies dropped by the 442d Group had been retrieved.

The infantry were assembled and ready for action by 0700, but the artillerymen had only one gun ready for use. However, two more guns were ready by noon after being dragged by hand out of gullies and over ledges. During the day positions were established on the heights, road blocks were set up, and patrols were sent out. At 1700 a patrol made contact with the enemy and found that Le Muy was still in German hands. On the basis of that information the guns of the 463d fired 22 rounds into enemy positions.

The 509th was well satisfied with its formidable drop zone. The conclusion it drew from its experience was that a mass drop in mountainous terrain was not only practicable but had definite advantages. It gave a force time to assemble, gather its equipment, and organize with the least possible chance of enemy interference. Moreover, such a drop enabled paratroops to begin operations from high ground. Like the German jump on Leros and the later American jump on the narrow summit of Corregidor, the drop on DZ C demonstrated that the most successful airborne missions are often those dropped or landed on difficult terrain. Surprise and other tactical advantages may on occasion be well worth a limited increase in jump casualties.<sup>76</sup>

The mischance which led the 441st Group to drop its load in the vicinity of St. Tropez was of unexpected value to the Allied landings, for the paratroops took most of the town and attacked other enemy positions along the coast.

Company C of the 509th under Captain Jesse H. Walls had been dropped almost intact just outside St. Tropez. While assembling on a nearby hill, it was joined by about 20 men from Company B, which had been badly dispersed in its drop. At 0710 they were shelled and bombed by Allied ships and planes but identified themselves by means of panels and a US made from reserve parachutes in time to avoid casualties. At 0745 Captain Walls launched an attack on St. Tropez. Guided by French patriots, he and his men advanced to the center of town within half an hour and had liberated most of the little port before noon.

About 1400, however, they ran into stiff resistance from a company of German troops entrenched around the citadel. C Company was receiving

gallant support from guerrilla fighters (French Forces of the Interior) but lacked firepower to blast the Germans from their positions. The captain therefore sent out a call for reinforcements with bazookas and grenades. Some 15 more men from Company B came in answer to the call, and about 1500 a company of the 15th Regimental Combat Team arrived from its landing beaches three miles south of St. Tropez and plunged into the fight. Thus, outnumbered, the defenders of the citadel showed a white flag at 1530, but the last pocket of resistance in St. Tropez was not disposed of until about 2000.

The paratroops had not taken St. Tropez single-handed, but they played the principal role in its capture. Without them it would hardly have fallen before D plus 1. Their battle casualties were one man dead and nine wounded. The Germans lost 130 dead or captured in the citadel area alone.<sup>77</sup>

Batteries B and C of the 463d had been dropped in the St. Tropez area by the same error which put half of the 509th there. They weathered the Allied bombardment, got five guns in operation and captured three German batteries. However, the artillerymen were concentrated about three miles south of the town of St. Tropez and only a handful of them took part in its capture.

The mission of the 517th PCT after landing on DZ A was to establish itself in positions dominating the approaches to Le Muy from the northwest via Draguignan and from the west via Le Luc. The perimeter to be held was about three and a half miles west of Le Muy. It ran from about a mile east of Trans en Provence southward to a point a mile east of Les Arcs, then curved southeastward for a mile and a half. On its right flank the 517th was to make contact with the British near La Motte. Its left wing was to seek contact with the 509th.

As already noted, the four serials of paratroops intended for DZ A were badly dispersed. Fortunately, many men were dropped near enough to rejoin their units during the morning. Fortunately, too, the 517th faced only light resistance in occupying its allotted positions.

In accordance with its orders the 517th sent a company early in the morning to take the village of La Motte, a few hundred yards east of the drop zone, and make contact with 2 Brigade. This was easily done. Shortly before noon Trans en Provence, about two miles west of DZ A, was

occupied almost without resistance. By then all the initial objectives of the combat team had been occupied, but in some cases this was done by very few men. In the center of the perimeter Company A, originally designated the regimental reserve, was holding the sector of the missing 3d battalion with roadblocks manned by four or five men apiece. The gradual trickle of men and materiel dropped in that general vicinity had somewhat strengthened the 517th by nightfall, but it was still so weak as to be very vulnerable against a determined attack.<sup>78</sup>

A majority of the British 2 Parachute Brigade which was the equivalent of an American parachute regiment had come down, well concentrated on and around DZ O. The brigade was to clear and hold the area around its drop zone north of Le Muy, to make contact with the 517th, and to take Le Muy itself prior to dark on D-day.

The British quickly occupied the village of Le Mitan on the eastern edge of their drop zone. They set up their CP in the village and at 1000, after staff personnel arrived in the first glider mission, the task force also set up its CP there. One battalion of the brigade moved west, seizing 80 prisoners in the hamlet of Clastron, a mile and a half northwest of Le Muy, and making contact with the 517th at La Motte. Another battalion pushed south and before noon had taken the tiny village of Les Serres on the north bank of the Nartuby less than half a mile from Le Muy. Then it ran into difficulties. The enemy had strong positions around the bridge which spanned the Nartuby just outside Les Serres. Hampered, perhaps, by the absence of the artillery carried by the recalled Horsa serial, the British were not able to take the bridge until late afternoon.<sup>79</sup> By that time the reinforcements carried in the afternoon missions were arriving.

Troop carrier operations on the afternoon of D-day began at 1504 when the 35 Horsa-towing aircraft of the 435th Group made their second start. The big gliders carried 233 troops, 35 jeeps, 30 guns, and 31,378 pounds of ammunition, a total load of 248,000 pounds. They were joined in the assembly area by the Waco-towing substitute from the 436th Group which had mistakenly returned with them in the morning. The 435th had sent a plane to Corsica to pick up one of the Horsas released there on the first trip. Glider and

tug joined the formation at the first marker boat, northwest of Corsica.\*

The air was calm and slightly hazy. Over the sea the SCR-717 facilitated navigation by picking up the shore line at 50 miles, and the Gee station also proved helpful. Over the battlefield the smoke was thickening, and the maximum visibility near Le Muy was five miles. The MF beacon was not used, and the signals of the Eureka were not received until the lead ships were four miles from the landing zone. Apparently the beacon was just returning to the air. Thus for 14 miles after passing the IP the formation had to make its way over the hills without guidance from the pathfinders. It did so without difficulty and released its 37 gliders over LZ O according to plan at 1749. The return was uneventful, but one aircraft was damaged in landing.<sup>80</sup>

After the Horsas came CANARY, the second paratroop mission of the day, and the only one in the invasion besides ALBATROSS. It began at 1555 when the 437th Troop Carrier Group at Montalto dispatched a serial of 41 planes carrying the 551st Parachute Battalion. Aboard the aircraft were 736 troops and 10 tons of supplies and equipment. The 437th reported that its SCR-717 was effective at the astonishing distance of 100 miles. It twice checked its positions by Gee. The Eureka signals were received perfectly at as much as 35 miles. Thus guided the serial made an uneventful flight to DZ A. Arriving sometime between 1804 and 1810,† it found the T clearly visible despite some smoke. The recently arrived pathfinder troops had done their work well. All concerned agree that the jump was completely successful. Except for two who refused to jump, all the paratroops landed, well-concentrated, in the drop area. Only 17 men were injured. The 437th made an uneventful return and had all its planes home by 2018.<sup>81</sup>

Immediately after CANARY came the big glider mission, DOVE. Seven serials of 47 or 48 planes each were to tow 332 Waco gliders†† carrying the 550th Glider Infantry Battalion, additional

\*The other glider in Corsica was erroneously believed to have been ditched. It was picked up on D plus one and released over DZ O at 1101. Including this, 37 Horsas and 38 Wacos were delivered in BLUEBIRD. (Hist 435th TC Gp Aug 44).

†The 437th stated that its first plane arrived at 1804; the 551st gave the time as 1808; and the pathfinders believed it was 1810. The time is important since a delay in CANARY might have contributed to the mix-up in DOVE.

††The 51st Wing sent three more than its appointed 94, raising the total to 335.

artillery, and support troops—about 2,250 men in all. With them went great quantities of materiel.\* The 442d Group was again to fly the lead serial, followed by the 438th through 441st, and then by the 62d and 64th Groups. Only the three groups involved in BLUEBIRD and CANARY did not participate. Course, formation, flight-procedure and navigational aids were to be the same as those employed in the morning glider mission. The lead plane of each successive serial, except the last two, was to be eight or nine minutes behind the lead plane of the serial ahead. As it turned out, this spacing was a trifle tight.

The glider pilots had been briefed at 1300, and an hour before take-off time the planes and gliders were in position. The 442d began its take-off from Follonica at 1535 in heavy dust. At the southern end of the line the 64th Group at Ciampino, mindful of the fact that it was more than an hour's flight from the command assembly point over Elba, had put its first plane in the air at 1510. Probably the last group aloft was the 440th which, delayed by dust at Ombrone, took 36 minutes (1610 to 1646) to complete its take-off. One of its gliders was no sooner in the air than it had to make a forced landing. Its load was trucked back to the field and loaded on a substitute which made a successful sortie to the LZ two hours after the rest of the 440th. An abortive take-off in the 438th Group was likewise followed by transfer of the load and dispatch of a substitute at 1710, after the rest had gone.

Trouble began as the 442d crossed the coast. It claimed to have been impeded off Point Ala by the Horsa-towing planes of the 435th. This is hard to believe, since the records indicate that the 435th had passed Elba by 1610, while the 442d Group was not due there until 1631. Possibly CANARY caused the delay, though it seems unlikely that a parachute mission could be mistaken for one towing gliders.

More serious was the delay caused when, after passing Corsica, the glider towed by the lead plane of the 442d had to be ditched because of weakness in the tail. The group made a full turn to avoid a possible accident and keep in touch with its leader.

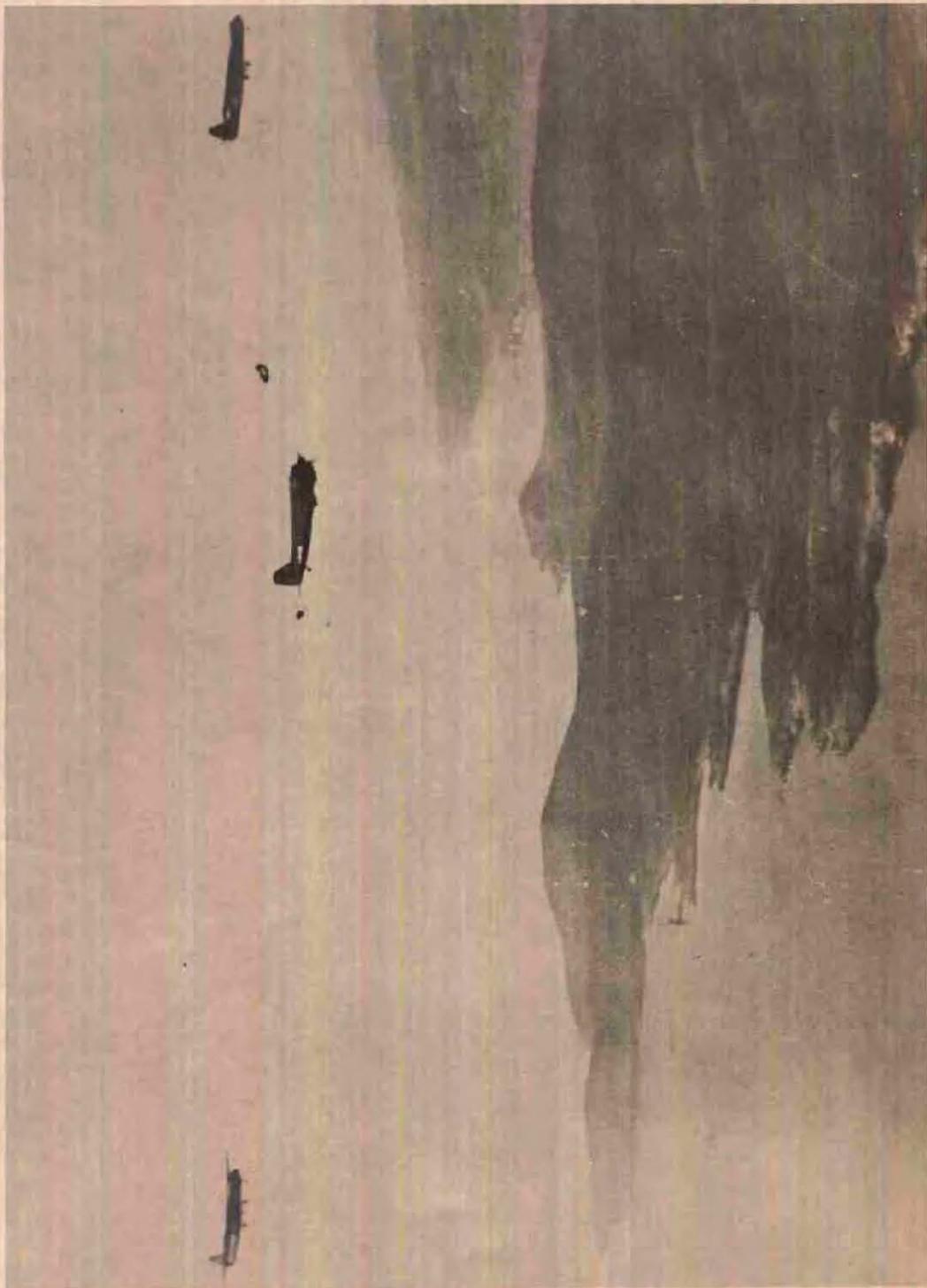
\*The 50th and 53d Wings delivered 1,862 glider-borne troops, 25 pieces of artillery and 120 vehicles. The 51st Wing brought 376 troops and 46 vehicles. (Hq IV TCC, Statistical Report for Operation "DRAGOON," 13 Sep 44; Hq MATAF, Report on Operation DRAGOON, Ann. D, 1 Nov 44; CMR for Mission DOVE, Hq 50th TC Wg Aug 44; Hist 438th TC Gp Aug 44).

Meanwhile, the 441st Group flew on ahead of it. All personnel aboard the glider were later rescued. Several gliders were released prematurely and three or four of them, apparently all towed by the 441st Group, came down at sea off the French coast. Most of the occupants were saved.

The first four groups in the mission, all from the 50th Wing, apparently got no benefit from radar or radio aids on their landing zones. The Eureka signals were faint or wholly absent and the 441st reported that the MF was jammed. Though the 441st and 440th encountered haze and smoke after passing the coast, all four groups found the landing zones and saw the fluorescent T's. All agreed that the fluorescent panels showed up well. The last three groups in DOVE got good results from the Eureka signals on the landing zones. However, the only group forced to utilize other than visual aids was the 64th, which released its gliders through smoke on the Eureka signal.

All serials and about 95 percent of the gliders reached the landing area. Unfortunately, largely because of the delay encountered by the 442d, the first five serials were jammed together, so that three groups, or at one moment, four, were over the area at the same time. The 442d Group arrived at 1827, 17 minutes late, and took 15 minutes to get rid of its gliders. The 441st arrived simultaneously with the 442d. Though the 442d was at LZ O and the 441st split between O and A, the congestion was still considerable. The two zones were unusually close together, and the route to LZ A led along the southern edge of O. The 440th Group, which arrived at 1840, made a 180 degree turn to avoid the congestion and the blinding western sun and approached LZ A from the west. The 439th arrived about 1848 to release 21 gliders on O and 26 on A. It found planes of the 441st still releasing at O and planes and gliders of the 441st and 440th criss-crossing spectacularly over A. One minute later the 438th Group arrived at LZ O and released its gliders.

The 62d Group cut loose its gliders over LZ O between 1854 and 1900 hours, and the 64th began its release over A at 1905. Comparatively free from interference by groups ahead of them, the 62d and 64th found that the 1,000-foot intervals between their own elements were decidedly insufficient. The rear elements climbed over the forward ones to make their release, with the result that several layers of gliders were in the air at once,



*Figure 8. Waco Gliders Cross French Coast during Invasion of Southern France, 15 August 1944.*



*Figure 9. Waco Gliders Landing near Le Muy in Southern France, 15 August 1944.*

and that many gliders were released at excessive heights. Some in the 62d were released at over 2,000 feet and some in the 64th as high as 3,000 feet.

Dodging and diving with agility the glider pilots managed to avoid colliding in mid-air. However, their first sight of the landing zones revealed something for which neither their briefing nor the available photographs had prepared them. The fields were studded with obstacles known in Normandy as "Rommel's asparagus." Poles from 4 to 6 inches in diameter were set in rows from 15 to 40 feet apart. Wires had been stretched between them, but the paratroops had cut the wires. Mines had been laid, but fortunately the Germans as yet had not been able to get fuses for them. Thus the glider pilots were able by adroit maneuvering to set their gliders down between the rows of poles.

Under the circumstances, it was natural that they should land wherever they could. Even in the lead group, the 442d, the pilots of the last 12 gliders found no room on their assigned fields and coasted down south of La Motte about 2 miles away. Fortunately, their loads were principally vehicles and extra ammunition for which there was no immediate need. The glider detachments of the 62d and 64th Groups found their fields completely filled with gliders and had to crash-land at average speeds of 80 to 90 miles an hour. Though they sheered off their wings on the poles and hit all kinds of obstacles, the pilots managed to get their passengers and cargoes to earth with an astonishing degree of safety.

The gliders, however, were a total loss. The 50th Wing reported two weeks later that only 2 of its gliders were serviceable and that only 26 could be salvaged. Indications are that the gliders in the three rear serials, which arrived after the good landing grounds were preempted, fared even worse. In the hectic time following the invasion such gliders as were salvagable were left unguarded. Weather and pillage combined to destroy them. Not one was ever recovered.

In making the landings 11 glider pilots were killed and over 30 were injured. About 100 of the glider troops were seriously hurt. Very little damage was done to the cargoes, although as usual great difficulty was encountered in getting them out. For example, the 62d Group reported that

all its gliders crashed but only one load was damaged.

The relatively high casualties among the pilots were caused partly by the obstacles into which they crashed and partly by heavy equipment in the gliders which lunged forward against them at the moment of impact. Most of them felt that the Griswold nose, had it been used, would have greatly reduced the casualties. They also favored use of parachute arrestors (general installation of which had been considered and given up due to lack of time), heavier lashing for the loads and safety-belts for the troops. Some pilots suggested that jeeps or tractors be employed to pull gliders landed in one wave out of the way, so that the next serial could land.

After leaving the release area the troop carriers dropped their tow ropes at a designated point, turned right, and returned according to plan. One plane was hit by a burst of German antiaircraft and was forced to come down in the sea off the French coast. All aboard were saved. The destruction of this single C-47 was the only appreciable damage the Germans were able to inflict on PTCAD in all its missions.

In general, antiaircraft fire was even slighter than it had been in the morning. At no time during the day did enemy aircraft attack the airborne missions. The fighter escort left early by prior agreement in order to reach its fields before dark, but no Nazi prowlers were on hand to attack the unprotected rear of the returning column. At 2138 the last plane of the 62d Group hit the runway at Galera. The troop carriers had completed their mission.<sup>82</sup>

The effort put forth by PTCAD on D-day may be summarized as follows:

Sorties Intended*	857
Sorties Accomplished†	852
Paratroop Sorties	444
Glider Sorties, Waco	372
Glider Sorties, Horsa	36
Troops Delivered‡	9,099
Paratroops	6,488
Glider Troops	2,611

\*Calculated from figures for the individual missions.

†Including premature drops and releases over French coastal waters.

‡The PTCAD Report states that exactly 9,000 troops were delivered. The discrepancy arises mainly because this Report credits the 51st Wing with carrying 1,979 troops in DRAGON, whereas the MATAF Report which states that the Wing carried 2,081 troops has been relied on in this instance.

Paratroops on or near DZ.....	50%
Glider troops on or near LZ.....	90-95%
Drop Casualties.....	2%
Landing Casualties.....	4%
Artillery Pieces Delivered.....	213
Vehicles Delivered.....	221
Other Supplies and Equipment.....	500 tons

In achieving this record most of PTCAD's planes and flying personnel had flown between 900 and 1,300 miles on 2 separate missions within a period of less than 20 hours. They had accomplished the dawn paratroop mission in the face of warnings that problems of take-off, assembly, formation flying and navigation at night made it impracticable. They had carried out a large glider mission with success which put LADBROKE to shame and compared favorably with the glider missions in OVERLORD. In the two big missions and two subsidiary ones they had delivered the equivalent of an airborne division.

Against these successes must be set certain failures. Fog, although it covered only the last 20 miles of the route, had misled 2 out of 3 pathfinder teams and caused more than 50 percent of the paratroops in the dawn mission to drop far from their goals. Even on the one zone where radar was installed only 60 percent of the troops had been accurately dropped. The afternoon glider mission had been thrown into confusion by congestion in the glider columns and by the presence of unexpected obstacles on the landing zones. Fifteen minutes allowed as margin for error would have averted most of the crowding. Recollection of the wide use of "Rommel's asparagus" in Normandy should have assured the dispatch of a low-level reconnaissance flight 5 or 10 days before the missions to see whether there were poles on the landing zones.

No other major flaws appeared in the execution of the missions. However, it should be remembered that they were not tested by opposition. No hostile aircraft and very little flak were encountered.

As the dust of the last glider landings cleared away, General Frederick reported that it had been "a wonderful operation so far." His force had closed on Le Muy and resistance there was "nearly neutralized."<sup>88</sup> His troops had in fact succeeded very easily in taking all their initial objectives except Le Muy. There, however, the Germans

were by no means neutralized, and the British battalion attacking them had shot its bolt. After a long flight and a day of repeated attacks, the men were exhausted.

Once aware of this situation, General Frederick, determined to take Le Muy without delay, called on his task force reserve, the 550th Glider Infantry Battalion. Most of the 550th had been landed about 1845 on and around LZ O. Glider crashes had taken a toll of 8 dead and 20 injured, but the unit had assembled by 1930 and was ready for action.

At 2000 the battalion commander was summoned to the task force CP and was ordered to make a night attack on Le Muy. The 550th was moved forward and at 2300 battalion battle orders were given. At 0230 on D plus 1 Companies A and C with B in reserve crossed the British-held bridge over the Nartuby. As they approached the outskirts of Le Muy, the attacking companies were pinned down by German machine guns emplaced in stone buildings with excellent fields of fire. The Americans were on open ground where any movement was revealed by flares. The Germans were well hidden, and the green troops of the 550th, unacquainted with the terrain, were unable to get at them or even to locate many of their positions. Therefore, with Frederick's approval, the battalion was withdrawn north of the river before dawn to reorganize.

At 0900 battalion orders were given for a fresh attack. This was to be made some distance west of the previous one in hope of having better cover and outflanking the German positions commanding the road. At 1140 Companies B and C and the heavy weapons company crossed the Nartuby by a ford found by the battalion intelligence officer 300 yards west of the bridge. This time they attacked boldly. While riflemen and machine gunners neutralized German positions, patrols closed in to flush the Nazis out with grenades and bazookas. Thus brought to bay, the Germans gave up, surrendering in groups of 20 and 30 at a time. The mortars of the heavy weapons company were used only twice to reduce strongpoints, and Company A of the 2d Chemical Battalion, which had been directed to support the 550th, was not needed. By 1300 the 550th had reached the town square, and Company A, which had been in reserve, was called forward to clear the enemy from

the southern part of Le Muy. By 1445 on D plus 1 resistance in Le Muy had ceased.

In taking the town the 550th had captured between 500 and 700 prisoners, more than its own entire personnel. Its losses had been 1 man killed and 15 wounded. At 1600 mopping-up parties on the southern outskirts of Le Muy hailed tanks carrying paratroops of the 509th.<sup>84</sup>

Early on the 16th the 509th had learned by radio from 2 Brigade that Le Muy was as yet untaken. They therefore decided to attack toward the town early in the afternoon. Brig. Gen. Frederick P. Butler, deputy commander of VI Corps, turned up at the battalion CP at 0945 with a reconnaissance party of the 45th Division, and agreed to assist the assault by sending up a platoon of tanks from the beachhead. VI Corps had encountered surprisingly light opposition and was heading for the Blue Line\* well ahead of schedule.

The 509th's attack, made about noon by two platoons of Company A, was held up by a German strongpoint south of Le Muy. However, Butler's tanks arrived at 1330 and their fire broke German resistance. The paratroops climbed aboard the tanks and were entering the town when they ran into the advancing patrols of the 550th. The tanks and their riders were then diverted southeastward on the highway to Fréjus to make contact with the advance guard of the 36th Division. In their defense of DZ C and their attack on Le Muy, the 509th had incurred just seven casualties.<sup>85</sup>

Although the capture of Le Muy was the highlight of D plus 1, the airborne troops took two other important places that day. At dawn elements of the 517th Regiment had attacked Les Arcs about four and a half miles southwest of Le Muy on the road to Le Luc. By 0915 a patrol had entered the town. The German garrison resisted tenaciously and were reinforced by approximately a battalion attacking from the southwest. In the afternoon they filtered through the thinly held lines of the 517th and seemed on the verge of breaking them. At that moment the 3d battalion of the 517th arrived by forced marches from Fayence and promptly swung into action. Its intervention gave the regiment a better grip on Les Arcs, but German pressure continued until evening. Then part of the 180th RCT, which had fought its way from the 45th Division beaches to Vidauban and

then turned eastward, broke through German forces a mile and a half south of Les Arcs and made contact with the 517th. That broke the back of the most formidable resistance faced by the airborne forces in DRAGOON. The Les Arcs sector was won.<sup>86</sup>

A second victory was the taking of Draguignan, an important garrison town and road junction some seven miles northwest of Le Muy. On D-day fighting broke out in the town between the German garrison and a substantial, but inferior, force of French Maquis, who were in danger of being trapped. The nearest American unit was the 551st Parachute Infantry Battalion. At 2100 on D-day after its successful afternoon drop the 551st had taken over the position of the 2d battalion of the 517th near Trans en Provence about halfway between Le Muy and Draguignan.

At 1130 on D plus 1 the 551st was instructed to undertake an attack on Draguignan, leaving a minimum force to hold its former positions. At 1605 it was ordered to attack at once. The battalion set out quickly and marched to within a mile and a half of Draguignan before running into machine-gun fire from Germans dug in on a series of wooded ridges. After clearing the ridges the 551st prepared to attack the town. Under the direction of French guides Company A attacked from the east while B made an assault from the south.

Resistance was slight, and by 2300 both companies were in Draguignan. By 0430 next morning the capture had been completed at a total cost of one man killed and six wounded. The paratroops took 400 prisoners including General Bieringer of LXII Corps and his staff. The Germans said they preferred surrender to a retreat which would risk capture by the Maquis. Allied bombing and airborne operations had isolated them almost completely, both from the beachhead and from commands in the rear. German gasoline dumps taken at Le Muy and Draguignan proved a windfall. Seventh Army had underestimated its initial fuel requirements, and the 50-mile advance of American motorized units in the next 3 or 4 days was made possible by this captured gasoline.<sup>87</sup>

Meanwhile, during D plus 1 the British airborne troops had pushed five or six miles north of Le Muy and a considerable distance east of it.<sup>88</sup> By midnight on 16/17 August the airborne task force had won itself an airhead of over 50 square miles.

\*See above, p. 80.

Its task was done. VI Corps had already issued orders for it to stay in position until relieved. Units from the beachhead had made contact with it from the southwest and from the south. A battalion of the 142d Regiment, pushing up from Fréjus, was bivouacked less than five miles southeast of Le Muy. During the night the Germans between it and the airborne troops abandoned their positions. Thus on the morning of the 17th the 142d was able to march peacefully into Le Muy.<sup>88</sup> Airhead and bridgehead had merged.

The task force reported that at noon on the 17th its combat efficiency was 80 percent. By 1300 its troops around Le Muy had been relieved by VI Corps units and were assembling for a new assignment. Outlying elements of 2 Brigade northeast of Le Muy were relieved on the morning of the 18th by 36th Division. On 19 August the airborne task force was given the task of defending the east flank of Seventh Army from Fayence to La Napoule. At the same time it was directed to make ready the release of 2 Brigade for return to Italy, and on the 22d this release was effected.<sup>89</sup>

To provide for resupply of the airborne troops a seven-day level of supplies had been set up near Rome under the management of the 334th Quartermaster Depot Supply Company. An automatic resupply mission, known as EAGLE was scheduled for the morning of 16 August, D plus 1. It was to be flown by 50 planes of the 435th Group and 50 from the 436th. The drop, originally set for 0814, was postponed for two hours in order that fog over the drop zones would have time to clear. Another last-minute change was expansion from 100 to 112 planes. The serials of the 435th and 436th were each cut by 3, and 18 were added from the 437th Group.

The 435th put its first plane in the air at 0755 and at 0814 set out on its way. The 436th and 437th fell in behind it at Cape d' Uomo. Aboard the planes were about 246 tons of supplies, largely ammunition. Part of the load was carried outside in pararacks, part inside on rollers. A quarter-

master crew of five men was aboard each plane to unload the supplies.

The weather was good. The Eurekas on DZ's A and O were picked up before the planes reached the French coast. The panels on the drop zones were plainly visible. The 435th began its drop at 1004, the 436th at 1022, and the 437th at 1035, generous intervals compared to those prescribed for the assault missions. No enemy opposition was encountered, and despite a minor collision all planes returned safely.

As the historian of the 435th Group remarked, the system of resupply was "not yet foolproof." The unloading, supposed to take 30 seconds, took over 2 minutes. The crews were awkward. The rollers stuck. Several planes had to make repeated passes. Of 264 pararacks carried by the 436th Group, 31 were not released. A high drop from over 2,000 feet and difficulties in unloading caused dispersion. The airborne task force reported that partly because of dispersion and partly for lack of personnel and vehicles to collect them, about 60 percent of the supplies were lost. Moreover the proximity of DZ's O and A resulted in an awkward mingling of British and American equipment. Thus, although more than 1,700 bundles were dropped in EAGLE\* and 95 percent of them landed safely, many units did not receive items they needed. In a more critical situation this loss, dispersion, and confusion could have been dangerous.

Three small, unscheduled, emergency supply drops were made on 17 August. At 0112 nine planes of the 62d Group dropped rations at DZ O. At 1049 medical and signal supplies were dropped there by 10 planes of the 64th Group, and 20 planes of the 62d Group did likewise at 1300. They delivered in all about 60 tons of supplies. By that time enemy opposition in the vicinity of the drop area had collapsed.<sup>91</sup> The climactic airborne operation of the Mediterranean campaigns had reached a successful conclusion.

\*In addition one paratrooper was dropped.

## Conclusion

The lessons of airborne warfare in the Mediterranean are lessons drawn from the first dubious and speculative trials of a new weapon. Before DRAGOON, none of the missions could be flown in accordance with an established doctrine, for no such doctrine existed. Instead they served as experiments in which men learned the operating procedures used in Normandy, at Nijmegen, and at Wesel. It should be noted that like most experiments the Mediterranean missions were on a small scale. Again excepting DRAGOON, no mission carried more than a reinforced regimental combat team.

This lack of size was dictated by lack of means. The Allies learned between 1941 and 1944 that large numbers of transport planes cannot be bought "off the shelf" in wartime and that a force of troop carrier pilots and navigators cannot be created overnight. One group dropped paratroops in the November maneuvers of 1941. Only one group was fit to fly paratroops in the airborne assault on Oran in November 1942. Evidently for at least a year after the start of a war, the scale of airborne operations cannot much exceed the scale set for them in prewar preparations.

This is not to say that to avoid such a delay large troop carrier forces must be in operation on D-day. Civilian transports can be converted to troop carriers as the C-47 was converted. Experienced navigators and pilots of multiengine aircraft can be called up from reserves or drawn from surplus bomber personnel and retrained for troop carrier work in about two months. Both processes, however, require foresight and careful consideration. The failure of such makeshifts as the C-33, the B-18, and the British Whitley is evidence that any planes likely to be converted for troop carrier

use should be designed to meet troop carrier requirements. Likewise, the miscarriage of the missions to Oran and to Sicily demonstrates that only fully qualified personnel should be expected to cope with the difficulties and dangers of an airborne mission. It takes at least as much skill to drop paratroops accurately by night on fields as it does to drop bombs by day on factories. FUSTIAN showed that it sometimes requires an equal amount of nerve.

Unlike other personnel of an air force, troop carrier crews, even veterans in an active theater of operations, need a continuous training program. Bombers generally fly missions every week in good weather. The troop carriers in the Mediterranean went for 7, 8, and even 11 months without flying an airborne mission. During these intervals insatiable demands for air transport held training to a minimum. For long periods no more than four or five planes would be on training status, and even they would not be working together. Similar pressures held the training period before a mission to as short a time as possible. Only a week of training with the airborne troops could be worked in before the invasion of Italy. If untoward events such as the delayed modifications and bad weather before TORCH or the complicated movements before AVALANCHE cut into the brief training period, there was no remedy. The carriers had to fly their mission as best they could. If bungling occurred, everyone was shocked by the inefficiency, but no one took adequate steps to ensure proper training.

The solution was not to remove troop carrier crews from air transport work, but to rotate them by squadrons or, in a large force, by groups, to work with equivalent units of airborne troops. On

missions they had to fly as units and drop troops as units in tight formation despite darkness, wind, and fog. To succeed in such missions they needed to practice as units. The cost of such a continuous training program would not have been great, simply an increase in the number of planes and crews on training status from a ratio often lower than 5 percent to a level in the neighborhood of 15 percent.

Under such a program no pilots would have been as rusty as were many of the 51st Wing three weeks before DRAGOON. Pre-mission training could thus have been focused more on rehearsals and less on such fundamentals as formation flying. Moreover, the units in training could have served as a ready reserve, available for small airborne missions. Lack of such a reserve was one reason why relatively few airborne missions in World War II were flown on short notice to meet an emergency or grasp an opportunity.

It is a truism that airborne operations should be planned with careful attention to the capabilities of the men and equipment involved. Yet the prodigious night flight to Oran, the zig-zag route to Gela, and the use of gliders released in the dark over open water for an assault mission against Syracuse are striking examples of lack of realism in planning. These decisions were made by higher headquarters with the more or less reluctant acquiescence of the troop carriers. The moral seems to be that, as was finally done in DRAGOON, the airborne and troop carrier staffs should be given as free a hand as possible in determining how and whether a mission should be accomplished. Incidentally, such a policy would have saved a great deal of time wasted before HUSKY, AVALANCHE and DRAGOON in the preparation of unsound plans which had to be abandoned or radically revised.

In apparent contradiction to the above is the absolute necessity for close liaison and even closer harmony between all parties connected with an airborne mission. Despite occasional recriminations, troop carriers and airborne worked well together, because they understood each other's problems. Elsewhere, particularly among naval commanders, ignorance and prejudice persisted as late as 1944. However, the disastrous Allied fire on the follow-up missions in Sicily, though not primarily due to lack of liaison, so dramatically impressed all concerned with the need for it that

all commands cooperated admirably after HUSKY.

In assessing the effectiveness of airborne missions as they were executed in the Mediterranean, it is convenient to think of them as aerial cavalry raids. The analogy is helpful, because there are many close parallels between the two types of operation.

Like cavalry horses, the slow, unarmored, inflammable planes of the troop carriers were very vulnerable to enemy fire. For this reason a direct airborne attack, even after preliminary bombardment, on any area strongly protected by anti-aircraft was considered as suicidal as a cavalry charge over open ground swept by enemy guns. The idea of launching an airborne assault against an enemy stronghold like Toulon was never seriously contemplated. The danger of interception by enemy planes was considered to be potentially even greater than that from anti-aircraft. It is doubtful whether German fighters were able to shoot down a single troop carrier plane in any of the Mediterranean missions. The Allies, remembering how easily they themselves had slaughtered German transports in the "Palm Sunday Massacre,"\* never gave them a chance. In Sicily, in Italy, and in southern France, they used their aerial superiority to break the striking power of the enemy air force before dispatching any airborne missions. Even so, they considered surprise to be essential to success. Therefore they flew their missions at low altitudes, took great precautions to blind or deceive enemy radar, and preferred to schedule drops at night or at dawn. When daylight missions were flown in North Africa and southern France, they were given escorts outnumbering any concentration of enemy fighters likely to be encountered. Resupply missions were avoided as far as possible lest they be anticipated and ambushed.

Cavalry raiders at night have always been notoriously likely to straggle and to lose their way, but the troop carriers were still more subject to these failings. Dispersion and faulty navigation were enemies which the carrier commanders were never able to conquer. After allowing for bad weather and all the other handicaps under which the Mediterranean missions were flown, it appears that even under good conditions paratroop missions flown at night without navigational aids to

\*See W. F. Craven and J. L. Cate, eds, *The Army Air Forces in World War II*, II (Chicago, 1949), 191.

*Conclusion*

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mark the drop zone were unlikely to put half of their passengers within a mile of the zone.

A remedy was sought in the use of lights and of radar devices both to mark the route and to pinpoint the DZ. That this remedy was not infallible was shown at Avellino and in the British drop in southern France during which many troops were dropped far from the DZ despite excellent radar aids. Moreover, pathfinder missions sent out to place beacons on the drop zone might themselves get lost, as happened in DRAGOON, or might put the enemy on the alert. A radar like the SCR-717, which was able to see in the dark, could make pathfinders unnecessary, but in World War II the SCR-717 was too crude to be relied on entirely. The enigmatic pictures which it gave over land would have baffled Sherlock Holmes. The Gee type of radar, which also gave promise of supplanting the pathfinders, was not really given a trial in the Mediterranean.

Like cavalry the airborne troops lacked both firepower and staying power. Airborne divisions had no tanks and only thirty-six 75-mm. howitzers prior to 1945. No piece larger than the 75 would fit in a C-47 or a Waco glider. A standard German infantry division possessed thirty-six 105-mm. howitzers and eighteen 155-mm. howitzers and also had more 75-mm. guns and howitzers than the American airborne. A German panzer division, besides having large amounts of artillery, had a complement of 88 Mark IV and 88 Mark V tanks. The former were more than a match for the 75. The latter, with 88-mm. guns and with armor almost impenetrable by the artillery of the airborne troops, were certain to win against them in the open field. The airborne commanders were well aware that in a battle with a first-class German division, they would be badly outgunned. Never in the Mediterranean did they risk a large-scale encounter with the panzers, and the possibility of such a battle played an important part in determining the cancellation of the proposed missions to Rome and to Anzio.

Until surface contact was established with friendly forces, airborne troops fighting without surface lines of communication needed approxi-

mately a third as many planes per day to keep them supplied as had been employed to deliver them. There was seldom room to bring supplies for more than a day or two in the initial mission. If bad weather or enemy action interrupted the resupply missions, or if supplies were dropped out of reach, an airborne force would very quickly cease to be able to fight. Hence the anxiety aroused by the proposed Capua mission, which (except for the Rome project) was the only airborne venture more than three days march ahead of an Allied offensive to win the approval of the Allied Mediterranean commanders.

Once on the ground, airborne troops abruptly ceased to resemble cavalry. For most of their transportation they had to depend on "Shanks' mare." This was because the C-47 and the Waco could carry nothing bigger than a jeep, and very little space could be spared on an airborne mission for any vehicles except those required to haul howitzers. An American infantry division was allotted 2,113 vehicles including hundreds of large trucks. When the equivalent of an airborne division launched an assault on southern France, it brought with it a total of only 221 vehicles including motorcycles and ammunition carts. The only way airborne troops could make rapid forays from their DZ or LZ was to find and seize vehicles on the spot as the British did when they commandeered busses at Souk-el-Arba.

These considerations determined the character of airborne missions in the Mediterranean. They were subsidiary operations designed to take valuable positions or to isolate enemy troops in conjunction with large frontal assaults by land or sea. Sometimes, as in Africa and at the Sele, they were profitably used to throw troops into an area ahead of the enemy. Usually the objectives were from 5 to 15 miles behind enemy lines, far enough to avoid troop concentrations, near enough for quick relief of the airborne force. Despite all their limitations and misadventures the success of the missions was sufficient to win the support of the Allied commanders for bigger and bolder airborne ventures in northern Europe.

## Glossary

Airborne mission	Sequence of flights to and from an objective area by troop carrier aircraft engaged in an airborne operation.
Airborne operation	Operation in which troops are transported by air for entry into combat.
Airborne phase	Period between the dropping or landing of airborne troops and their junction with other friendly forces.
Airborne task force	Troop carrier and airborne units organized for a specific operation.
Airborne troops	Ground units organized and/or trained for airborne operations.
Airhead	Area held during the airborne phase of an operation; more strictly, such an area having facilities for the landing of aircraft with troops or supplies.
Airtransported troops	Ground units transported by air but not organized or trained for airborne operations.
DP (Departure point)	Designated point from which the serials in an airborne mission set out on course.
DZ (Drop zone)	Area precisely designated for dropping paratroops and supplies.
Element	Smallest aerial formation; usually two or three aircraft.
Flight	Formation composed of two or more elements.
Horsa	British wooden 30-place glider carrying military loads of 6,900 pounds.
IFF (Identification friend or foe)	Radar device for identifying friendly aircraft by responses to the signals of a ground interrogator.
IP (Initial point)	Designated point from which serials in an airborne mission set their final course to their respective drop or landing zones.
Jumpmaster	Member of a planeload of paratroops who is designated to direct the jump.
LZ (Landing zone)	Area precisely designated for the landing of gliders.
Paratroops	Units organized and/or trained to drop by parachute for entry into combat.
Pathfinders	Force sent in advance of an airborne mission to set up navigational aids on the prescribed zone or zones.
PCT (Parachute Combat Team)	Parachute infantry regiment and associated supporting units, usually a field artillery battalion and an engineer company.

Resupply

Delivery of supplies to an airhead.

Serial

Formation usually composed of several flights and separated from other formations in a mission or exercise by a specified time interval.

Stick

Planeload of paratroops.

Tug

Aircraft towing a glider.

Waco (CG-4A)

American 15-place glider carrying military loads of 3,750 pounds.

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16. Ltr, Air Cdre R. M. Foster to NAAF A-5, subj: Troop Carrier Operations, 28 May 43, in 612.305; Hq NAAFTCC, General Plan for the employment of the NAAF TCC in Opn HUSKY, 30 May 43; Hq Force 343 (Air), Extracts from XIII Corps OPS Order 1, 9 Jun 43, both in 626.430J.
17. Hq NAAF, Husky Air Planning Memo 2, May 43; Hq NAAF A-5, Husky Planning Notes, 5, 21 May 43; both in 612.305; ltr: Brig Gen M. D. Taylor to CG Force 343, subj: Move of 82d A/B Division to Base Airborne Area, 4 May 43, in KCRC Files of 7th Army G-3, "Opns Rpt HUSKY Info A/B Troops"; min of mtg held 1700 21 May

- 43, QM Maint Sec, AFHQ, subj: Mounting of Airborne Division, in KCRC, 5th Army Files 381 "Preparations for War 1943"; ltr, Hq NAAFTCC to CO 51st TC Wg *et al.*, subj: Assignment of Airdromes, 3 Jun 43; ltr, Brig Gen P. L. Williams to Maj Gen Browning, subj: Assignment of Airdromes, 3 Jun 43; both in 626.430J; NAAFTCC Sicilian Rpt, pp. 24-25.
18. Force 141, Opn Instr 1, 19 May 43, in 626.430J; Col D. E. Williams, Participation of the MAAF in the planning and execution of Opn Husky, in AU Lib. M-17089.
  19. Force 141, Standing Opn Instr 12, Recognition and control of gunfire against aircraft, 9 Jun 43, in 626.430J.
  20. Operation Husky—Conf. on convoy escorts, etc., held at Tripoli, 4 Jun 43; in 626.430J.
  21. *Ibid.*, Force 141, HUSKY—Revision of Outline Air Plan, 4 Jun 43, in 626.430J; Troop Carrier maps and overlays, in 613.278.
  22. Hq NAAFTCC, Opnl Plan for Opn HUSKY, 20 Jun 43; ltr, Air Cdre R. M. Foster to CG NAAFTCC *et al.*, subj: Routing of Troop Carrier Aircraft, 20 Jun 43; ltr, Hq NAAFTCC to AOC, Malta, subj: Detailed Plans—Operation Husky, 25 Jun 43, in 626.430J.
  23. Hq NAAFTCC and NAAFTCC A-3 Diaries, 6 Jul 43; Msg, COMNAVNAV to CTG's 80.1 *et al.*, 6 Jul 43, in KCRC, Files of 7th Army G-3, "Operations in June 1943–July 1943."
  24. Bradley, *A Soldier's Story*, p. 126; ltr, CO 61st TC Gp to CO 52d TC Wg., subj: Final Rpt on HUSKY # 1 and # 2, 20 Jul 43, in Unit Hist File.
  25. Hq Force 545 (Air), Planning Memo 4, 23 May 43; Hq Force 545, Outline plan for diversionary opn FUSTIAN, 23 May 43, in 626.430J; Hq NAAF, Diversionary air opns D minus 4 to D plus 3, 5 Jul 43, in 655.430W.
  26. Ltr, Maj Gen M. B. Ridgway (CG 82d A/B Div) to CG Force 343, thru CG II Corps, subj: Fighter Protection for Parachute Assault Teams, 27 May 43, and indorsements; ltr, Hq NATAF to CG Force 343, subj: Fighter Protection for Parachute Assault Teams, 13 Jun 43; ltr, Brig Gen P. L. Williams (CG NAAFTCC) to CG Force 141 *et al.*, subj: Troop Carrier Requirements for Air Support in the Initial Stages of HUSKY, 13 Jun 43; Hq (Rear) XII ASC, Air Support Estimate Force 343 (20 Jun 43); Hq NAAFTCC, Opnl plan for Opn HUSKY, 20 Jun 43, all in 626.430J; Hq WOLF, Overlay, air support request for CT 505, 18 Jun 43; Hq I Armored Corps, A/B Div. support requests, 1 Jul 43; both in KCRC, files of 7th Army G-3, "HO-25 Air Support Requests"; Williams, The A/B assault phase of the Sicilian campaign, a transcript of remarks made at Hq VIII ASC, 17 Aug 43, in 532.452A.
  27. NAAFTCC Sicilian Rpt pp. 3-4; Hq NAAFTCC Diary, 7, 13 Apr 43; Hq NATAF, Memo on lessons from Opn HUSKY, 18 Sep 43, in 650.01-3.
  28. Hq 60th TC Gp, Daily Opns Rpts, May 43, in Unit Hist File; Hist 51st TC Wg, 15 May–17 Aug 43.
  29. Air Ministry, *Airborne Forces*, pp. 83, 89; Hist 51st TC Wg 1 Jun 42–15 May 43; AAF Hist Studies No. 1, The Glider Pilot Training Program, 1941-1943, pp. 72-73, 83; min of mtg held at Norfolk House, 10 Aug 43 to discuss future policy relating to the employment of airborne forces, in 505.10-6; memo from Wg Comdr W. S. Barton, subj: Parachute and Glider for HUSKY, in KCRC, 7th Army Files, "O51A A/B Notes."
  30. Hist 51st TC Wg, 1 Jun 42–15 May 43; NAAFTCC A-4 Diary, 23, 27 Apr 43, in 611.13.
  31. AAFSC/MTO Historian, Aircraft and glider assembly in MTO, pp. 51, 58, in 636.84; diaries, Hq NAAFTCC, 4 May, 6 Jun 43, NAAFTCC A-3, 5 May 43, NAAFTCC A-4, 30 Apr, 5, 7, 15 May 43.
  32. Aircraft and glider assembly in MTO, pp. 58, 59.
  33. Norman Macmillan, *The Royal Air Force in the World War* (London 1949), III, 220; Air Ministry, *Airborne Forces*, p. 88; msg, Gen Browning to AFHQ, 3 Jul 43, in 612.305; NAAFTCC A-3 Diary, 3 Jul 43.
  34. Aircraft and glider assembly in MTO, p. 49; diaries, Hq NAAFTCC, 16 Jun 43, NAAFTCC A-3, 30 Jun 43; NAAFTCC A-4, 7 May 43.
  35. Hist 51st TC Wg, 15 May–17 Aug 43; Hq 60th TC Gp, Daily Opns Rpts, Jun 43.
  36. NAAFTCC Sicilian Rpt, pp. 9, 10; memo from Wg Comdr W. S. Barton, subj: Parachute and Glider for HUSKY, in KCRC, 7th Army Files, "O51A A/B Notes."
  37. Lt Col C. Billingslea to C/S WD, thru CinC AFHQ, Rpt of A/B Opns "Husky" and "Bigot," 15 Aug 43 [hereinafter cited as Billingslea Rpt]; Hist 52d TC Wg, Activ-Aug 43; Hist 51st TC Wg, 15 May–17 Aug 43.
  38. Hist 52d TC Wg Activ-Aug 43; Billingslea Rpt; CO 61st TC Gp, Final Rpt on HUSKY # 1 and # 2, 20 Jul 43; Hq 82d A/B Div, The 82d Airborne Division in Sicily and Italy, p. 27, in AU Lib. M-27471.
  39. James M. Gavin, *Airborne Warfare* (Washington, 1947), p. 5.
  40. Hq NAAFTCC Diary, 26 Jun, 5 Jul 43.

41. Macmillan, *The RAF in the World War*, III, 220; Air Ministry, *Airborne Forces*, p. 88; Hist 51st TC Wg 15 May-17 Aug 43; Min of mtg held at Norfolk House, 10 Aug 43, to discuss future policy relating to the employment of airborne forces.
42. Hist 52d TC Wg Activ-Aug 43; Hist 329th Service Gp, 2 Mar 42-31 Jul 43.
43. NAAFTCC Sicilian Rpt, p. 16; NAAFTCC A-3 Diary, 8 Jul 43; Journal, 60th TC Gp S-2, 5-9 Jul 43, in Unit Hist File; CMR, 48th TC Sq, Mission HUSKY, 10 Jul 43, in Unit Hist File; ltr, CO 61st TC Gp to Sq CO's, subj: Briefing Program, 3 Jul 43, in 14th TC Sq Hist File; Hist 18th TC Sq, Jul 43.
44. NAAFTCC Sicilian Rpt, pp. 23-24, 73 (The two statements differ. The former appears more accurate); *AAF in World War II*, II, 800 (Chap. 14, n 2); Hq 51st TC Wg to CG XII TCC (Prov.), Rpt on A-2 activities during the North African-Sicilian Camp, 4 Sep 43; Hist 51st TC Wg, 15 May-17 Aug 43; CMR's 316th TC Gp, HUSKY Mission # 1, 5 Aug 43; 14th TC Sq, 10 Jul 43; 48th TC Sq, Mission HUSKY, 10 Jul 43; all in Unit Hist Files.
45. Gavin, *Airborne Warfare*, p. 2; NAAFTCC Sicilian Rpt, p. 79; Hq Force 343, FO 1, 20 Jun 43; Hq 1st Inf Div, FO 26, 20 Jun 43; Hq 82d A/B Div FO 1, Jun 43; above three in individual, titled folders in KCRC, 7th Army Files. A statement that 2,781 troops were carried probably refers only to the men of the 505th. (*AAF in World War II*, II, 449; NAAFTCC Sicilian Rpt, p. 79). If this figure were correct, the average load of each plane would have been 12 men, an abnormally small number, whereas figures given by three squadrons indicate an average load of 16 men. (Hist 17th TC Sq, Jul 43; Hist 47th TC Sq, Jul 43; Sicilian Camp Sum 49th TC Sq, 29 Sep 43; in Unit Hist Files.)
46. CMR's 14th and 59th TC Sq's, 10 Jul 43, in Unit Hist Files; Histories 14th, 15th, and 59th TC Sq's, Jul 43; 35th TC Sq S-2 Journal, 9 Jul 43, in Unit Hist File; Hist 51st TC Wg, 15 May-17 Aug 43; The 82d A/B Div in Sicily and Italy, pp. 6, 27. The published statement that the planes assembled over Kairouan "soon after 1800" is not borne out by any available unit reports or histories, and appears based on an ambiguous statement in the troop carrier report (*AAF in World War II*, II, 449; NAAFTCC Sicilian Rpt, p. 78). At 1800 the troops were assembling at the airfields (49th TC Sq Camp Sum, 29 Sep 44, in Unit Hist File). A take-off at that hour would have given the pilots daylight at Malta and moonlight over Sicily, conditions far more favorable than were actually encountered.
47. NAAFTCC Sicilian Rpt, pp. 50, 78, 79; Histories 61st TC Gp, Jul 43; 314th TC Gp Activ-Aug 43; ltr, CO 64th TC Gp to CO 52d TC Wg, subj: Personal Rpt on Mission "Husky," 10 Jul 43; CMR's 64th TC Gp, 10 Jul 43; HUSKY Mission No. 1, 316th TC Gp, 5 Aug 43, all in Unit Hist Files.
48. CMR's 48th and 59th TC Sq's, 10 Jul 43, in Unit Hist Files.
49. Gavin, *Airborne Warfare*, p. 8; interview with Brig Gen Ray A. Dunn, 14 Oct 43.
50. CMR's 14th, 48th, and 59th TC Sq's, 10 Jul 43; 49th TC Sq Sicilian Camp Sum, 29 Sep 43; all in Unit Hist Files; NAAFTCC Sicilian Rpt, pp. 80-81.
51. CMR, 59th TC Sq, 10 Jul 43.
52. Bradley, *A Soldier's Story*, p. 126-27; NAAFTCC Sicilian Rpt, p. 81; Hist 61st TC Gp, Jul 43; lecture delivered on the Sicilian landing operations by the Chief of Combined Operations; ltr, Brig Gen C. F. Born, NASAF A-3 to CG NAAF, subj: Lessons Learned During Husky, 28 Aug 43, in 626.430J; ltr, Lt Gen Carl Spaatz, CG NAAF to Gen Arnold, 14 Jul 43, in Opn Ltrs File, Hist Office.
53. NAAFTCC Sicilian Rpt, pp. 81-83; 82d A/B Div in Sicily and Italy, p. 6; Hist 313th TC Gp, Activ-Aug 43; Hist 314th TC Gp, Activ-Aug 43; Histories, 47th and 48th TC Sq's, July 43; CMR's 64th TC Gp, 19 Jul 43; 316th TC Gp, 5 Aug 43.
54. NAAFTCC Sicilian Rpt, p. 79; Overlay in Unit Hist Files, 48th TC Sq.
55. Hist 51st TC Wg, 15 May-17 Aug 43 (section on 64th TC Gp); Histories, 35th, 53d, and 59th TC Sq's, Jul 43.
56. NAAFTCC Sicilian Rpt, p. 82.
57. Gavin, *Airborne Warfare*, pp. 13-14; 82d A/B Div in Sicily and Italy, pp. 33-35; Billingslea Rpt, Hist 61st TC Gp, Jul 43; CO 61st TC Gp, Final Rpt on HUSKY # 1 and # 2, 20 Jul 43; Narrative of 1st Lt G. J. Watts, 504th A/B Regt; both in Unit Hist File, 61st TC Gp.
58. Gavin, *Airborne Warfare*, p. 14; 82d A/B Div in Sicily and Italy, pp. 5, 9, 12, 22-23, 32; Hist 314th TC Gp, Activ-Aug 43.
59. 82d A/B Div in Sicily and Italy, p. 28; NAAFTCC A-2, interview with U.S. Paratroopers in Mission HUSKY D-1/D, in 612.4521; CO 48th TC Sq to CO 313th TC Gp, Rpt of Mission Husky, 10 Jul 43, in Unit Hist File.
60. Gavin, *Airborne Warfare*, pp. 6-8; 82d A/B Div in Sicily and Italy, pp. 10, 29; 49th TC Sq, Sicilian Camp Sum 29 Sep 43.
61. Gavin, *Airborne Warfare*, pp. 8-9; 82d A/B Div

- in Sicily and Italy, p. 30; CMR, 316th TC Gp, Husky Mission No. 1, 5 Aug 43; interview with Capt W. B. Coursen, 31 Jan 44, in Hist File, 36th TC Sq.
62. Gavin, *Airborne Warfare*, pp. 9-12; 82d A/B Div in Sicily and Italy, pp. 22, 24-26, 29.
  63. Gavin, *Airborne Warfare*, pp. 14-15; 82d A/B Div in Sicily and Italy, p. 11; CMR, 64th TC Gp, 10 Jul 43; ltr, CO 64th TC Gp to CO 52d TC Wg, subj: Personal Rpt on Mission "Husky," 10 Jul 43.
  64. Gavin, *Airborne Warfare*, p. 15.
  65. Msg, Ridgway to CG 7th Army, 12 Jul 43, in KCRC, Files of 7th Army G-3.
  66. 82d A/B Div in Sicily and Italy, pp. 12, 24, 35.
  67. Bradley, *A Soldier's Story*, p. 127; NAAFTCC Sicilian Rpt, p. 104; 82d A/B Div in Sicily and Italy, p. 18; interview with Gen Dunn, 14 Oct 43; Feldmarshal Kesselring, Comments on MS # P-051A, A/B Opns, in 577.051-37.
  68. Ltr, Ridgway to CinC Allied Forces (thru CG 7th Army), subj: Analysis of Methods of Employment of 82d Airborne Division, NORTHWEST AFRICAN THEATER, Summer of 1943, 26 Jul 43, in KCRC, 7th Army Files 373 "Parachute Air Support 1943."
  69. NAAFTCC Sicilian Rpt., p. 108; Billingslea Rpt.; Airborne Forces, Joint memo by the Gen and Air Staff, War Cabinet, Chiefs of Staff Committee, 20 Sept 43, in 505.06-1.
  70. Bradley, *A Soldier's Story*, pp. 131-32; NAAFTCC Sicilian Rpt, pp. 55-62; ltr, Ridgway (address not stated), subj: Reported Loss of Transport Planes and Personnel due to Friendly Fire, 2 Aug 43, in Hist File 61st TC Gp; ltr, Gen Williams (CG NAAFTCC) to CinC AFHQ thru CG NAAF, subj: Operation HUSKY (Subsequent Missions, 52d Troop Carrier Wing and American 82d Airborne Division), 13 Jul 43, in 650.01-3, v. 3.
  71. Msg, Col R. E. Cummings, DC/S, Force 343 to CG's II Corps, 1st Inf Div, 45th Inf Div, 3d Inf Div, 2d Armored Div, U.S. Navy aboard *U. S. S. Monrovia*, 7 Jul 43; msg, Hq 7th Army, sgd Maj A. A. Lindquist to Gen Lemnitzer, 14 Jul 43; both in KCRC, 7th Army Files 373, "Parachute Air Support 1943."
  72. Williams, The airborne assault phase of the Sicilian campaign, 17 Aug 43, in 532.452A.
  73. NAAFTCC Sicilian Rpt, p. 57; ltr, Williams to CinC AFHQ, subj: Operation HUSKY (Subsequent Missions . . .), 13 Jul 43; Histories 14th and 53d TC Sqs, Jul 43.
  74. Bradley, *A Soldier's Story*, pp. 131, 133; 82d A/B Div in Sicily and Italy, pp. 7, 19; msg, 186 RAD, Taylor to CG 7th Army for Ridgway, 11 Jul 43; msg, C/S 7th Army to CG's II Corps, 45th, 1st and 3d Inf Divs and 2d Armored Div, 11 Jul 43; memo, Col H. G. Maddox, 7th Army G-3 to COMNAVNAW and XII ASC, 11 Jul 43; above three items in KCRC, Files of 7th Army G-3, "Operations Husky-Air Support."
  75. NAAFTCC Sicilian Rpt, pp. 57, 84-85; 82d A/B Div in Sicily and Italy, p. 19. The Troop Carrier Report states 2,008 troops were carried on the mission. General Williams gave the number as 2,304 (Rpt, p. 85; ltr, Williams to CinC AFHQ, 13 Jul 43).
  76. Histories 48th and 53d TC Sqs, July 43; 49th TC Sq, Sicilian Camp Sum, 29 Sep 43; CMR, 316th TC Gp, Husky Mission #2, 5 Aug 43, in Unit Hist File. Some reports give times an hour later than the rest. These have been adjusted to conform to the general pattern.
  77. Hist 59th TC Sq, Jul 43.
  78. NAAFTCC Sicilian Rpt, pp. 84, 87; 82d A/B Div in Sicily and Italy, p. 7; interview with Capt W. B. Coursen, 31 Jan 44; ltr, Co 48th TC Sq to CO 313th TC Gp, Rpt on Second Mission—Husky Operation, 12 Jul 43, in Unit Hist File.
  79. NAAFTCC Sicilian Rpt, p. 85; ltr, Williams to CinC AFHQ, subj: Operation HUSKY (Subsequent Missions . . .), 13 Jul 43; CMR's, 316th TC Gp, Husky Mission #2, 5 Aug 43; 59th TC Sq, 12 Jul 43; Hist 53d TC Sq, Jul 43.
  80. CMR's, 14th, 15th, 48th, 53d, and 59th TC Sqs, 12 Jul 43, in Unit Hist Files.
  81. Bradley, *A Soldier's Story*, p. 134; NAAFTCC Sicilian Rpt, p. 84; 82d A/B Div in Sicily and Italy, p. 7; Hist 47th TC Sq, Jul 43; ltr, CO 48th TC Sq to CO 313th TC Gp, Rpt on Second Mission—Husky Operation, 12 Jul 43; msg, Moorman to CG 7th Army, 2345 hours, 11 Jul 43, in KCRC, Files of 7th Army G-3, "Operations Husky—Air Support."
  82. CMR's 14th, 15th, and 59th TC Sqs, 12 Jul 43; Hist 53d TC Sq, Jul 43.
  83. 82d A/B Div in Sicily and Italy, pp. 7, 8; Hist 53d TC Sq, Jul 43; narrative of FO J. G. Pacassi, in Hist File, 15th TC Sq.
  84. Rpt of First Air Det (Type I) Prov, Husky Operation, 3 Aug 43, in AU Lib, M-34981-S; CMR, 14th TC Sq, 12 Jul 43.
  85. *The Sicilian Campaign*, Pub Br, Office of Naval Intel, U.S. Navy, Washington, 1945, p. 38; Action Rpt, Western Naval TF, pp. 9, 88, 114; AFHQ Tng Memo 43, cited in 142.021-13; Hq, AEAFA Air Signals Report on Operation NEPTUNE Planning and Assault Phase, Jul 44, in 505.29-32.

86. NAAFTCC Sicilian Rpt, p. 87; CMR, 316th TC Gp, Husky Mission #2, 5 Aug 43; CMR, 59th TC Sq, 12 Jul 43, in Unit Hist File.
87. Hist 316th TC Gp, Nov 43, Jan 44; memo, G/S 51st TC Wg, subj: Rpt on Impressions gathered during period of "FUSTIAN" Mission, 13/14 Jul 43, at A Strip, 15 Jul 43 in 611.302.
88. NAAFTCC Sicilian Rpt, p. 56; 82d A/B Div in Sicily and Italy, pp. 8, 19.
89. NAAFTCC Sicilian Rpt, p. 87; 82d A/B Div in Sicily and Italy, pp. 7-8; CMR, 15th TC Sq, 12 Jul 43 (this is almost the only specific claim of a successful drop outside the 313th TC Gp); Hist 47th TC Sq, Jul 43; CMR, 48th TC Sq, 12 Jul 43; Sicilian Camp Sum, 49th TC Sq, 29 Sep 43.
90. Billingslea Rpt; Ridgway memo, subj: Reported Loss of Transport Planes and Personnel Due to Friendly Fire, 2 Aug 43, in Hist File, 61st TC Gp, ltr, Brig Gen Aaron Bradshaw, Jr., CG 34th Coast Arty Brigade to CG 7th Army, subj: Report of Lessons Learned by AA Units in Operation HUSKY, 15 Sep 43, in KCRC, 7th Army Files 370.2.
91. Bradley, *A Soldier's Story*, p. 133; 82d A/B Div in Sicily and Italy, pp. 8, 13, 104; msg, Ridgway to CG 7th Army, 12 July 43, in KCRC, Files of 7th Army G-3, "Operations Husky—Air Support."
92. *AAF in WW II*, II, 453; Hist 61st TC Gp, July 43.
93. 82d A/B Div in Sicily and Italy, p. 13; Ridgway, Reported Loss of Transport Planes and Personnel Due to Friendly Fire, 2 Aug 43; Williams, The assault phase of the Sicilian campaign, 17 Aug 43.
94. CMR, 316th TC Gp, Husky Mission #2, 5 Aug 43; Hist 53d TC Sq, Jul 43.
95. NAAFTCC Sicilian Rpt, p. 86.
96. Bradley, *A Soldier's Story*, p. 134; Billingslea Rpt.
97. Msg, Ridgway to CG 7th Army, 12 Jul 43, in KCRC, Files of 7th Army G-3 "Operations Husky—Air Support." (This stated "Unless fire of all troops against all—repeat all—aircraft is stopped for approximately one and a half hours of their overland flight recommend against further troop movements by air."); ltr, Spatz to Arnold, 14 Jul 43; lecture delivered on the Sicilian landing operations by the Chief of Combined Operations.
98. Billingslea Rpt; NAAFTCC Sicilian Rpt, p. 107; Williams, The assault phase of the Sicilian campaign, 17 Aug 43; memo, Chief of Combined Operations to Chiefs of Staff, in 145.81-88; lecture delivered on the Sicilian landing operations by the Chief of Combined Operations.
99. NAAFTCC Sicilian Rpt, pp. 11-12, 71-72; 51st TC Wg FO 8, 7 Jul 43, in Unit Hist File; Hist 51st TC Wg, 15 May-17 Aug 43; Airborne Forces, Joint Memo by the General and Air Staff, War Cabinet, Chiefs of Staff Committee, 20 Sep 43, in 505.06-1; 60th TC Gp S-2 Journal, 10 Jul 43, in Unit Hist File; NAAFTCC A-3 Diary, 17 Jul 43; Figures on the number of troops carried range from 1,690 (NAAFTCC Rpt and A-3 Diary) to 2,016 (Joint Memo, Airborne Forces).
100. Air Ministry, *Airborne Forces*, pp. 89-90 (the figures in this account are slightly garbled); Hq 51st TC Wg to CG 51st TC Wg, Rpt of Ladbroke Mission as seen from A-3 Sec, 11 Jul 43; ltr, Senior Opns Off, 38 Wg RAF, Det to AOC 38 Wg, subj: Operation "Ladbroke," 21 Aug 43; both in 612.302; 60th TC Gp S-2 Journal, 10 Jul 43.
101. Sum of Glider Rpts on Operation "LADBROKE"—1st A/B Brigade; individual interrogation rpts on "Ladbroke" Mission, (60th TC Gp); Notes on 60th Troop Carrier Gp, 1st Mission, 9-10 Jul 43; ltr, 60th TC Gp S-2 to CG 51st TC Wg, subj: Questions on Ladbroke Mission, 17 Jul 43; ltrs, 51st TC Wg A-2 to CG 51st TC Wg, subjs: Rpt of "Ladbroke" Mission, 20 Jul 43, and Supplement to Rpt of "Ladbroke" Mission, 23 Jul 43; all in 612.302; ltr, Hq 62d TC Gp to CG 51st TC Wg; Rpt after Action Against Enemy—Ladbroke Mission, 24 Aug 43, in Unit Hist File.
102. 51st TC Wg, FO 8, 7 Jul 43; 60th TC Gp FO 15, 9 Jul 43, 62d TC Gp FO 14, 8 Jul 43, in Unit Hist File; Williams, The airborne assault phase of the Sicilian Campaign, 17 Aug 43.
103. CMR's 60th TC Gp, "Ladbroke" Mission, 10 Jul 43; 62d TC Gp, (Ladbroke Mission) 10 Jul 43, both in 612.302; 1st Lt E. P. Bailey to CG NAAFTCC, Observer's rpt on glider tactical mission, 10 Jul 43, in 450.01-3; interview with Gen Dunn, 14 Oct 43. See also sources in n 110.
104. Journals, 60th TC Gp S-1 and S-2, 10 Jul 43, in Unit Hist File; see also sources in n 110 and CMR's in n 112.
105. NAAFTCC Sicilian Rpt, pp. 12, 77; CMR, 51st TC Wg, "LADBROKE" Mission, 9-10 Jul 43, 10 Jul 43, in 612.302; 60th TC Gp S-1 Journal, 11 Jul 43; see also sources in n 110.
106. Michael Packe, *First Airborne* (London, 1948), p. 98; Air Ministry, *Airborne Forces*, p. 90; ltr, Maj. Gen G. F. Hopkinson to AFHQ, subj: Honors and Awards, 9 Jul 43, in Hist File of 51st TC Wg, lecture delivered on the Sicilian landing operations by the Chief of Combined Operations.
107. Air Ministry, *Airborne Forces*, p. 95; AAFSAT Air Supt Dept, Reference Manual for Troop Carrier Div, Apr 43, in 248.21-5; Col J. T. Dalbey, A/B troops in a landing assault (lecture), 28 May 43, in 502.141; min of mtg held at Norfolk House,

- 10 Aug 43, to discuss future policy relating to the employment of A/B forces.
108. Williams, The airborne assault phase of the Sicilian campaign, 17 Aug 43; interview with Gen. Dunn, 14 Oct 43.
  109. Sum of glider rpts on Operation "LADBROKE." The map of glider landings in 602.302 is identical with that in the NAAFTCC Rpt and not very reliable. Two very helpful and generally accurate maps, which do not, however, agree entirely with the above summary, are to be found in 612.4521.
  110. Bernard L. Montgomery, *Eighth Army, El Alamein to the River Sangro* (New York, 1949) pp. 119-20; Airborne Forces, Joint Memo by the General and Air Staff, War Cabinet, Chiefs of Staff Committee, 20 Sep 43.
  111. Saunders, *The Red Beret*, p. 126; 60th TC Gp S-2 and 62d TC Gp S-2 Journals, 10-11 Jul 43, both in Unit Hist File; NAAFTCC A-3 Diary, 10 Jul 43.
  112. Montgomery, *Eighth Army*, pp. 122-23; 60th TC Gp S-2 and 62d TC Gp S-2 Journals (this sets the first take-off at 1920), 12-13 Jul 43, in Unit Hist File.
  113. NAAFTCC Sicilian Rpt, p. 91; ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Report of "Fustian" Mission, 20 Jul 43; 1 Parachute Brigade Opn "FUSTIAN" Sum of Personnel and Containers (undated), both in 611.302.
  114. NAAFTCC Sicilian Rpt, pp. 91-93; ltr, 62d TC Gp S-2 to CG 51st TC Wg, subj: Report of Fustian Mission, 13 Jul 14 Jul 43; ltr, 60th TC Gp S-2 to CG 51st TC Wg, subj: Consolidated Interrogation Reports on "Fustian" Mission, 20 Jul 43; ltr, OC 38 Wg Det to OC 51st Wg, subj: Interrogation Reports, 21 Jul 43 (reports attached); ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Report of "Fustian" Mission, 20 Jul 43; ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Details Supplementary to Report of "Fustian" Mission, par. 19, 20 Jul 43; ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Consolidated Interrogation Report of "Fustian" mission concerning 38th Wg, RAF, 23 Jul 43; Preliminary rpt on success of drop on Operation "FUSTIAN"—1 Parachute Brigade (undated); above items in 611.302 (seven items). These documents contain the basic material on FUSTIAN, and have been used throughout the account of the operation.
  115. Ltr, C/S 51st TC Wg, to CG NAAFTCC, subj: Report of "Fustian" Mission, 14 Jul 43, in 612.4521; ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Report of "Fustian" Mission, 20 Jul 43.
  116. Map showing position of planes fired upon or shot down in FUSTIAN and "Reference list to accompany map showing aircraft under fire from naval vessels during FUSTIAN Mission," 20 Jul 43, in 611.302. See also smaller version of above map in 612.4521.
  117. NAAFTCC Sicilian Rpt, p. 94; NAAFTCC A-4 Diary, 27-28 Jul, 1 Aug 43; ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Amendment to Report of "Fustian" Mission, 23 Jul 43, in 611.302; ltr, 60th TC Gp Engr to CO 60th TC Gp, subj: Report of Aircraft and Gliders Damaged and Lost, 9 Aug 43; ltr, 60th TC Gp S-2 to CO 60th TC Gp, subj: Consolidated Interrogation Report on Fustian Mission, 13-14 Jul, 9 Aug 43, both in Unit Hist File; ltr, 62d TC Gp S-2 to CO 51st TC Wg, subj: Historical Record . . . Re: Report After Action Against Enemy—Fustian Mission, 24 Aug 43, in Unit Hist File.
  118. Statement, Sgt Allen, 1 Para Brigade to 51st TC Wg A-2, 8 Aug 43; ltr, 1st Lt P. B. Greenough to Col W. T. Gardiner, 9 Aug 43, both in 611.302.
  119. Saunders, *The Red Beret*, p. 136 (The statement by Saunders that one stick was dropped in Italy seems erroneous, since the map cited below notes that the only missing stick was later found near Belpasso in the Etna area). See also ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Report of "Fustian" Mission, 20 Jul 43, and Supplement, 23 Jul, in 611.302; Preliminary Rpt on Success of Drop On Operation "FUSTIAN"—1 Parachute Brigade; map "62d Group FUSTIAN Mission," in Hist File 62d TC Gp.
  120. Montgomery, *Eighth Army*, p. 123; Saunders, *The Red Beret*, pp. 130-37; Airborne Forces, Joint Memo by the General and Air Staff, War Cabinet, Chiefs of Staff Committee, 20 Sep 43; ltr, 60th TC Gp Asst S-2 to all Sq S-2's, subj: FUSTIAN MISSION, 26 Jul 43, in 611.302; Hist, 7th TC Sq, Jul 43.
  121. Ltr, 51st TC Wg A-2 to CG 51st TC Wg, subj: Report of "Fustian" Mission, 20 Jul 43.
  122. Min of mtg held at Norfolk House, 10 Aug 43, to discuss future policy relating to the employment of airborne forces.
  123. Ltr, Gen Spaatz, CG NAAF, to Gen Arnold, 14 Jul 43, in Opns Ltrs File, Hist Div.
  124. Edward J. Flanagan, Jr., *The Angels, A History of the 11th Airborne Division* (Washington, 1948), p. 11; Greenfield, Palmer, and Wiley, *The Organization of Ground Combat Troops*, pp. 345-46; interview with Gen Dunn, 14 Oct 43.

## CHAPTER IV

1. Ltr, AFHQ to CG 5th Army, subj: Operations on the Italian Mainland, 27 Jul 43; msg W 6952/9620,

- Cite FHCIC, FREEDOM to AGWAR for CCS and to US for Brit. Chiefs of Staff, sgd Eisenhower, 10 Aug 43, both in KCRC Fifth Army Files 381 "Preparations for War 1943."
2. 82d A/B Div in Sicily and Italy, pp. 41, 51; NAAFTCC A-3 Diary, 17, 21 Aug 43; Hq NAAF, Operation AVALANCHE—Outline Plan of Troop Carrier Opns (undated), in 505.90-8.
  3. 82d A/B Div in Sicily and Italy, pp. 43, 52.
  4. Gavin, *Airborne Warfare*, p. 22; Maj Patrick D. Mulcahy, A/B Observer, AFHQ, Final Rpt on the AVALANCHE airborne drop, in 505.90-8.
  5. 82d A/B Div in Sicily and Italy, pp. 43, 52; Hq XII TCC, Rpt of TCC activities including the Italian invasion, 1 Aug-30 Sep 43 [hereinafter cited as XII TCC Rpt of Italian Invasion], p. 118, in 613.3063; Hq 5th Army, 5th Army Hist, I, 83, in 680.01.
  6. Winston S. Churchill, *Closing the Ring* (Boston, 1951), pp. 103-11; Eisenhower, *Crusade in Europe*, pp. 183-86.
  7. Clark, *Calculated Risk* (New York, 1950), pp. 180-81; 82d A/B Div in Sicily and Italy, pp. 45, 52; XII TCC Rpt of Italian Invasion, p. 119; Hq XII TCC Diary, 4 Sep 43, in 613.13; Hist 60th TC Gp, Sep 43; Hist 62d TC Gp, Sep 43.
  8. Interview with Gen Dunn, 14 Oct 43; XII TCC Rpt of Italian Invasion, pp. 38-44, 110; 82d A/B Div in Sicily and Italy, p. 48.
  9. Eisenhower, *Crusade in Europe*, p. 186; Bradley, *A Soldier's Story*, p. 167; memo from Brig Gen M. D. Taylor and Col W. T. Gardiner, subj: Mission to Rome, and atchd log of mission, in Hist File 51st TC Wg.
  10. 82d A/B Div in Sicily and Italy, p. 48; Hist 52d TC Wg, Sep 43.
  11. Bradley, *A Soldier's Story*, p. 167; NAAF A-5 Liaison Officers, Rpt on Air Opns, Opn "Avalanche," (1943), in 505.90-8.
  12. 82d A/B Div in Sicily and Italy, pp. 43, 52.
  13. Hist 52d TC Wg, Aug 43.
  14. Hq IX TCC, Pathfinder (mg within I TCC, in 251-4; AAFSAT, Hist Air Support Dept, I, 526-27, in 245.32-1.
  15. NAAFTCC A-3 Diary, 28 Aug 43; XII TCC Rpt of Italian Invasion, pp. 93-97; Hist 51st TC Wg, 17 Aug-30 Sep 43; Hist 52d TC Wg, Aug 43.
  16. Clark, *Calculated Risk*, p. 196; XII TCC Rpt of Italian Invasion, pp. 65, 121; 82 A/B Div in Sicily and Italy, p. 53.
  17. XII TCC Rpt of Italian Invasion, pp. 52-57, 63, 72; 82d A/B Div in Sicily and Italy, p. 53.
  18. XII TCC Rpt of Italian Invasion, p. 65.
  19. Clark, *Calculated Risk*, p. 199; XII TCC Rpt of Italian Invasion, p. 64; 82d A/B Div in Sicily and Italy, p. 49.
  20. XII TCC Rpt of Italian Invasion, pp. 63-64, 67.
  21. *Ibid.*, pp. 65, 122.
  22. *Ibid.*, pp. 67-68, 80, 93; 82d A/B Div in Sicily and Italy, p. 87. While the TCC Report gives three different sets of coordinates for the drop zone, an observer's statement that it was just north of the Solofrone places it precisely.
  23. Clark, *Calculated Risk*, p. 203; XII TCC Rpt of Italian Invasion, pp. 65, 67; 82d A/B Div in Sicily and Italy, p. 54; XII TCC A-3 Diary, 13 Sep 43, in 613.305.
  24. Hist 52d TC Wg, Sep 43; Hist 313th TC Gp, Sep 43; Hist 53d TC Sq, Sep 43; CMR, 14th TC Sq, 14 Sep 43, in Unit Hist File. It is asserted that the A-2 Section of Troop Carrier Command had had photographs of the Sele area down to the 52d Wing that morning, but they may well have been side-tracked in the confusion (XII TCC Rpt of Italian Invasion, p. 65).
  25. XII TCC Rpt of Italian Invasion, pp. 66-67, 95, 97; 82 A/B Div in Sicily and Italy, p. 87; NAAF A-3 Opnl Rsch Sec, Rpt on the Paratroop Opns of the NATCC and the 82d A/B Div on the nights of the 13th/14th and 14th/15th Sep 43 with particular reference to the navigation aids in these opns, 24 Oct 43, in 142.021-13 [An indispensable account, part, but not all of which, is embodied in XII TCC Rpt, pp. 92-102].
  26. Hq 313th TC Gp FO 18, 13 Sep 43; Hist 313th TC Gp, Sep 43; Hist 47th TC Sq, Sep 43; narrative of 2d Lt D. Q. Paulsel, 47th TC Sq; Overlay of course, 47th TC Sq, all in Unit Hist Files; CMR, 313th TC Gp, 14 Sep 43, in 613.308.
  27. Histories 14th, 15th, 53d, and 39th TC Sqs, Sep 43; CMR's 14th and 15th TC Sqs, 14 Sep 43, all in Unit Hist Files; CMR 61st TC Gp, 14 Sep 43, in 613.308.
  28. Hist 314th TC Gp, Sep 43; Hist 62d TC Sq, Sep 43; CMR, 314th TC Gp, 14 Sep 43, in 613.308.
  29. XII TCC Rpt of Italian Invasion, pp. 68, 97; 82d A/B Div in Sicily and Italy, p. 87; interview with Gen Dunn, 14 Oct 43; NAAF Rpt on the Paratroop Opns of the NATCC and the 82d A/B Div, 24 Oct 43. The NAAF Report sets the number of troops dropped at 800, and the same estimate is embodied in the TCC Report [pp. 93, 98]. A published estimate (*AAF in World War II*, II, 531) states there were "more than 600." These totals are incredibly low in view of the number of aircraft and the fact that the mission was set up to carry

- two reinforced battalions. Moreover, two squadrons specify that with 22 or 23 planes they carried 362 troops, and the three pathfinder planes transported 50 parachutists as well as their special equipment. (Histories 53d and 59th TC Sqs, Sep 43; TCC Rpt, p. 97.) Thus General Dunn's figure of 1,300 appears approximately correct.
30. XII TCC Rpt of Italian Invasion, p. 78.
  31. XII TCC Rpt of Italian Invasion, pp. 79-81, 98; 82d A/B Div in Sicily and Italy, pp. 87, 90; NAAF Rpt on the paratroop opns of the NATCC and the 82d A/B Div, 24 Oct 43; Histories 313th, 314th, and 316th TC Gps, Sep 43; Histories 44th and 45th TC Sqs, Sep 43; CMR's, 313th, 314th, and 316th TC Gps, 15 Sep 43, in 613.308; MR's 15th and 59th TC Sqs, 15 Sep 44, in Unit Hist Files.
  32. XII TCC Rpt of Italian Invasion, pp. 64, 72, 73; NAAF Rpt on the paratroop opns of the NATCC and the 82d A/B Div, 24 Oct 43; Hist 64th TC Gp, Sep 43; Hq 51st TC Wg FO 16, 13 Sep 43, in Unit Hist File.
  33. XII TCC Rpt of Italian Invasion, pp. 74-75; NAAF Rpt on the paratroop operations of the NATCC and the 82d A/B Div, 24 Oct 43; interview with Gen Dunn, 14 Oct 43; Hist 64th TC Gp, Sep 43; Histories 16th, 17th, and 35th TC Sqs, Sep 43; Journals, 16th, 17th, and 35th TC Sq S-2's, 14 Sep 43; in Unit Hist Files; CMR, Avalanche Mission, 51st TC Wg, 15 Sep 43, in Unit Hist File; Lt Col Yarborough, The parachute attack directed against Avellino, Italy, the night of 14/15 Sep 43 (Oct 43), in KCRC, 509th Para Bn Files "Journal 1/42-1/45."
  34. NAAF Rpt on the paratroop opns of the NATCC and the 82d Div 24 Oct 43; Yarborough, The parachute attack directed against Avellino; Account of Lt Justen T. McCarthy, in KCRC, 509th Para Bn Files "Journal 1/42-1/45."
  35. Maj P. D. Mulcahy, AFHQ Observer, Final Rpt on the Avalanche A/B drop (1943), in 505.90-8.
  36. Min of mtg at Hq MAAF to discuss air transport situation in Mediterranean area, 2 Feb 44, in 622.01.
  37. Feldmarshal Kesselring, Comments on MS #P-51a, A/B Opns, in 577.051-37.
  38. *Airborne Forces*, p. 98; Churchill, *Closing the Ring*, pp. 206-17, 222, 335, 411; Eisenhower, *Crusade in Europe*, p. 191; Henry M. Wilson, *Eight Years Overseas, 1939-1947* (London, 1948), pp. 173-78; Hq RAFME, RAF Mediterranean Rev #5 (Oct.-Dec. 1943), pp. 76, 80, 82, 88; Hq MAC Air Plans, RAF Opns Record Bk, in 612.305; Hq XII TCC Diary, 1 Oct 43.
  39. 5th Army Hist, II, 12, 13; Hist 52d TC Wg, Oct-Dec 43; Hq XII TCC Diary, 7-11 Oct 43; XII TCC A-2 Diary, 8-12 Oct 43; XII TCC A-3 Diary, 9 Oct 43, in 613.305.
  40. Msg W3325/1806 NAF 486, Eisenhower to AGWAR, 25 Oct 43 (WDHRB Microfilm reel 369-F); msg, Hollis to Jacob, subj: Record of Conference Held 25 Dec 43, in FROZEN CABLES WDSS (both transcripts by Mr. Finney, USAF Hist Div).
  41. Churchill, *Closing the Ring*, pp. 440, 443, 493; Wilson, *Eight Years Overseas*, p. 190; 5th Army Hist, IV, 9; 82d A/B Div in Sicily and Italy, p. 82; Hq XII TCC Diary, 2 Jan 44; Hq NATAF, Opnl Direc for Operation "SHINGLE" No. 1 to CG Air Supt Comd, 30 Dec 43, in 622.430C.
  42. 5th Army Hist, IV, 19; notes on a conference on "SHINGLE" held at XII Air Supt Comd Hq on 3 Jan 44, photostat in 12th AF Files 282-29; msg EA 77J CG XII ASC to CG MATAF, 14 Jan 44, photostat in 12th AF Files 282-29 (both transcripts by Mr. Finney, USAF Hist Div); Hq 52d TC Wg, Overlay for Opn SHINGLE, 11 Jan 44, in 613.278; Hq 52d Wg FO for SUN ASSAULT, 15 Jan 44, in Unit Hist File.
  43. Histories 61st and 316th TC Gps, Jan 44; Hq 52d TC Wg FO for SUN ASSAULT, 15 Jan 44; Hq XII TCC Diary, 19, 20 Jan 44.
  44. 82d A/B Div in Sicily and Italy, p. 83; ltr, Maj Gen E. J. House to Dean, 14 Sep 44, in AAG Files 381-H from transcript by Mr. Finney, USAF Hist Div. MATAF seems to have known on the 19th that SUN ASSAULT would not take place (Hq MATAF, Opn "SHINGLE" Opn Instr 1, 19 Jan 44, in 622.430C).
  45. 5th Army Hist, IV, 22.
  46. Hist 316th TC Gp, Jan 44; 82d A/B Div in Sicily and Italy, p. 83.
  47. Hq MATAF, Opns Bk, 26 Apr 44, in 626.302; 51st TC Wg Camp Sum, 1 Jan-30 Jun 44; Air Ech 62d TC Gp, Preliminary Survey, Paratroop Opn, 21 May 44, in 650.4521A; Hq 509th Para Bn, Outline Plan Parachute Phase, 5th Army Opn "LEDGER," 29 Apr 44; memo for Clark from Brig Gen D. W. Brann, 5th Army G-3, subj: Parachute Battalion drop vicinity TERRACINA, 4 May 44; Hq 5th Army, Opn Instr 19, 20, 21, 18, 19, 22 May 44; Hq 509th Para Bn FO 3, 21 May 44 and Amdmt 1, 22 May 44, all but first three items in KCRC, 509th Para Bn Files "Operations 5/44."
  48. Hist 51st TC Wg, Jun 44; Hist 62d TC Gp Jun 44; Hq MATAF, Opns Bk, 15 Jun 44; Hq 5th Army, Opn Instr 28, 6 Jun 44, in 650.4521A.
  49. Hist 62d TC Gp, May and Jun 44; Hq MATAF, Opns Bk, 1-3 Jun 44; 51st TC Wg Camp Sum,

- 1 Jan-30 Jun 44; 62d TC Gp Actg S-3 to CO 62d TC Gp, subj: Review of Mission "Hasty," 2 Jun 44; CMR, Opn—HASTY, 62d TC Gp, 3 Jun 44, above three in 650.4521A.
50. Msg CGS 324, AAI to AFHQ, 30 Mar 44; msg O-2508, AAI to AFHQ (undated); ltr, C/S AFHQ to CG French Forces in Corsica, subj: Operation BRASSARD, 9 Apr 44; Hq MATAF, Outline Air Plan—Operation "BRASSARD," 16 Apr 44, all in 626.430M.
51. Min of mtg held at College Fesch at 0900 Thursday, 11 May 44, between French, British, and American staffs to decide certain questions concerning Opn BRASSARD, in 626.430M; Hq MATAF, Opns Bk, 3 Jun 44; Brig Gen G. M. O. Davy, AFHQ G-3 Opns, Report of Preparations for Opn BRASSARD, 24 May 44, in 626.430M; min of mtg of Troop Carrier, Airborne and Ground, and Navy staffs at First Army Corps Headquarters at Ajaccio, 29 May 44, in 650.4521A.
52. Wilson, *Eight Years Overseas*, p. 211; Hq MATAF, Opns Bk, 10, 13 Jun 44; Hist 62d TC Gp, Jun 44; msg IC 54, TD, Darcy to Cannon, 14 Jun 44; msg CGS 402, AAI to AFHQ, 12 Jun 44; Msg FHGCT XXERO 1 X, AFHQ to AAI, sgd SACMED, 13 Jun 44; msg FHGCT F 59436, AFHQ to AAI, MAAF, sgd SACMED (revd 15 Jun 44), above messages in 626.430M; ltr, Det "C-1" Allied Liaison Service G-2, G-3 Sec to CO Det "C-1" A. L. S. subj: Summary of main phases of Operation "BRASSARD" (undated), in KCRC, 7th Army Files "Operation BRASSARD."
53. Hq MATAF, Opns Bk, 1 Aug 44; Hist 435th TC Gp, Aug 44.
54. Hq MATAF, Opns Bk, 20-21 Apr 45; Hq 15th Army Gp, Opns Memo 12, Opn HERRING, 11 Apr 45; msg O-5404 and O-5417, 15th Army Gp to 5th Army, 8th Army, 1 ISAS and MATAF, 18 and 20 Apr 45, last three items in KCRC, AFHQ Files, "370.2 (1945) #2."
55. AFHQ G-3 Sec, Rpt on the initial planning, opns to date and future intentions in regard to Opn MANNA, 17 Oct 44; MJPS, Opn DOGFISH Appreciation and Outline Plan, 29 Aug 44; Hq 51st TC Wg, Tactical Air Plan for Opn "DOGFISH," 6 Sep 44, all in 621.322A.
56. Hq 12th AF, Troop Carrier Opns 1944, in 613.307; Hist 51st TC Wg, Oct 44.
57. Hist 51st TC Wg, Dec 44-Apr 45; Hq MATAF, Opns Bk, 18, 29 Nov, 1-4, 8 Dec 44.
58. Hist 51st TC Wg, Apr 45.
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8. Hq 7th Army, 7th Army Rpt of Opns France and Germany, 1944-45, I, 8, 10.
  9. SACMED Rpt on S. France; SAC (44) Min of Supreme Allied Commander's Conferences, 35th, 36th, 38th, 42d, 43d, 44th Mtgs, 21, 24, 29 Apr, 9, 12, 15 May 44, in Archives, USAF Hist Div.
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  16. Hq Force 163, Draft Tentative Outline Plan "ANVIL" Extract, 25 Mar 44, in 626.301; Hq MAAF, Outline Air Plan for Opn ANVIL (AAF/P.1, 6th Draft), in 622.430H; Proposed Plan for Presentation of "ANVIL" to SAC (22 Apr 44); Draft Presentation of 163 Outline Plan, 24 Apr 44; both in KCRC, 7th Army Files, "Outline Plans (ANVIL) Tentative, June, July 1944," Hq MATAF, Opns Bk, Mar 44, *passim*.
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  18. Hq MATAF, Opns Bk, 21 Jun 44; msg DAF 686, Pankhurst to AM Slessor, 23 Jun 44; MJPS, P/179 (2d Draft) Org of A/B Forces for ANVIL, 23 Jun 44, in 626.301; SAC (44) SACMED conferences, 57th Mtg, 26 Jun 44.
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  20. Msg, SCAEF 53, SHAEF to AGWAR for CCS sgd Eisenhower, 23 Jun 44; msg IE 787 CS, Norstad to Eaker sgd Spaatz, 27 Jun 44; msg IE 791 CS, Norstad to Eaker sgd Spaatz, 27 Jun 44; both in 632.430F; ltr, CG 51st TC Wg to CG MAAF, subj: Personnel and Equipment for Incoming Units, 5 Jul 44, in 626.301; ltr, CG 9th AF to CG IX TCC, subj: Troop Carrier Participation in Opn "Anvil," 8 Jul 44, in 505.61-1; ltr, Hq USSTAF to CG 9th AF, thru Maj Gen H. S. Vandenberg, DC AEF Air Hq, subj: Troop Carrier Participation in Operation ANVIL, 11 Jul 44, in Archives, USAF Hist Div; ltr, Hq SHAEF to CG USSTAF, subj: Assistance to Operation "ANVIL," 13 Jul 44, in 622.430H.
  21. Two memos for MJPS from Col J. S. Guthrie, Force 163 G-3, 22 Jun 44; AFHQ MJPS, P-179 Orgn of A/B Forces for ANVIL (1st draft) 22 Jun, (2d draft) 23 Jun, (Final) 25 Jun 44; all in KCRC, 7th Army Files "O-51, A/B Opns for 'ANVIL'"; Hq Force 163, "ANVIL" Outline Plan Tentative, 26 Jun 44; Hq Force 163, "ANVIL" Outline Plan Tentative, 5 Jul 44; both in KCRC, 7th Army Files "Outline Plans 'ANVIL' Tentative, Jun, Jul 44."
  22. Hq MATAF, Outline Plan—Opn "ANVIL," Jul 44, in 622.430G.
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  28. SAC (44) SACMED Conferences, 67th Mtg, 15 Jul 44; ltr, Eaker to Arnold, 16 Jul 44, and Annex F, Your Plan for the AVIGNON Airborne Operation, in 622.01 (v. 2); SHAEF AEF Staff Plans, Prog of Planning Ser 61, Position of Planning on 18 Jul 44, 22 Jul 44, in 505.61-1.
  29. Ltr, Eaker to Arnold, 16 Jul 44, and Annex A; Hq 1st A/B TF, Sum of our opns 15 Jul to 31 Aug 44, 1 Oct 44, in KCRC, Files of 1st A/B TF (untitled folder).
  30. Hq PTCAD FO 1 for Opn DRAGOON, 7 Aug 44; in 655.430H; Overlay of DZ's 21 Jul 44, in KCRC 509th Para Bn Files; Overlay of DZ's, 22 Jul 44, in KCRC, 7th Army Files, "1st A/B Task Force 'ANVIL'"; Hq 1st A/B TF, Photo Interpretation Rpt on Proposed DZ-C, 28 Jul 44, in KCRC, 7th Army Files, "O-95 Photo RCN Rpts."; Hq 1st A/B TF, Photo Interpretation of DZ-O and LZ-O, 31 Jul 44, in KCRC, 7th Army Files "O-51 A/B Opns. for ANVIL."
  31. SAC (44) SACMED Conferences, 66th Mtg, 15 Jul 44; ltr, Gen Williams to Brig Gen H. L. Clark, 31 Jul 44, in Archives, USAF Hist Div; Hq PTCAD, Rpt for Opn DRAGOON 22 Aug 44, in 655.430H; Hq IX TCC, Troop Carrier Opnl Activities, 29 Nov 44, in 546.02.
  32. SAC (44) SACMED Conferences, 68th Mtg, 22 Jul 44; AFHQ Opn Memo 61, 22 Jul 44; Hq MAAF, Opn Instr 61, 22 Jul 44; above two in AU Lib M-28442; Naval Comdr Western TF, Opn Plan 4-44, Annex F, App. 1, Pt. VI, 24 Jul 44, in 622.430G; Hq PTCAD FO 1, 7 Aug 44, App. C, PTCAD Run-In Overlay, 25 Jul 44.
  33. Hq PTCAD, Tactical Air Plan for Opn ANVIL, 29 Jul 44, in Hq PTCAD FO 1, 7 Aug 44, and Amdmt. 1, 12 Aug 44; Hq 53d TC Wg FO 1, App. A, Air Movement Table, 9 Aug 44, in Unit Hist File; Hq 1st A/B TF, Sum of Our Opns 15 Jul to 31 Aug 44, 1 Oct 44.
  34. Naval Comdr Western TF, Opn Plan 4-44, Annex B, App. 14, 24 Jul 44; Hq MATAF, Outline Plan—Operation "ANVIL," 8 Jul 44, Amdmt. 2, 27 Jul 44, in 622.430G; Hq MATAF, Opns Instr 6, Fighter Escort and Cover for Troop Carrier Opns, 7 Aug 44, and Amdmt. 1, 9 Aug 44; Hq MASAF, Opns Instr 2, "DRAGOON," 9 Aug 44; ltr, CO 306th Ftr Wg to CG XV Ftr Comd (Prov.), subj: Dragoon Operations, 15 Oct 44, above three in 622.430H.
  35. Hq 509th Para Bn, Estimate of the Situation Paratroop Phase Opn LEDGER, 4 May 44; in KCRC, 509th Para Bn Files.
  36. Hq MAAF, Signals Rpt on Opn "DRAGOON," Dec 44, Col J. E. Totten, Sig Plans, Hq MAAF, RCM Instr for Opn "Anvil," 22 Aug 44, Annex A to Min of 2d Mtg of R.C.M. Planning Bd (undated) both in 622.430H.
  37. Hq PTCAD, Rpt for Opn DRAGOON (this is the principal troop carrier source and should be referred to for almost all phases of the preparation and execution of PTCAD's operations. Therefore it will not be cited from here on except on debatable points); ltr, Williams to Clark (no subj), 31 Jul 44; (MAAF) Conf at Caserta, 10 Jul 44, in 622.430H.
  38. Msg OZ-4058, COSMED 161, AMSSO to SACMED, 29 Jul 44; msg. OZ-4059, COSMED 162, AMSSO to SACMED, 29 Jul 44, in 505.61-1.
  39. See n 37.
  40. Hq 12th AF GO 121, 5 Aug 44, in 650.193; Hist 50th TC Wg, Jul, Aug 44.
  41. Msg U 77 E, 51st TC Wg, sgd Manning to CG's MAAF, MATAF, 12th AF, 30 Jun 44; msg Y 56 F, 51st TC Wg, sgd Manning to CG 12th AF, 2 Jul 44; both in 650.1622; ltr, Hq 51st TC Wg to CO's 60th, 62d, and 64th TC Gps, subj: 51st TC Wg Glider Training Center, 17 May 44, in 650.4521A.
  42. Hist, 53d TC Wg Advon, 18 Jul-24 Aug 44; Hist 441st TC Gp, Jul 44; Hist Avn Engrs in MTO, in 638.01; Hq MATAF, Outline Plan—Opn "ANVIL," 8 Jul 44; msg MX 25240, Eaker to CG XII TAC, 20 Jul 44, in 650.1622.
  43. Ltr, Williams to Clark, 31 Jul 44; Histories 46th and 80th Serv Sqs, Jul, Aug 44; Hist 437th TC Gp, Aug 44; msg MX 23221, Eaker to MAAF, Algiers for Adler, 2 Jul 44; msg Y 63 C, Gravely to Cannon, 17 Jul 44, in 650.1622.
  44. Hist 50th TC Wg, Aug 44; Hist 53d TC Wg Advon, 18 July-24 Aug 44; Hist 436th TC Gp, Aug 44.
  45. Msg Y 750 G, 51st TC Wg, sgd Manning, to CG 12th AF, 30 Jul 44, in 650.1622; Histories 439th TC Gp, Jun-Aug 44, 440th and 442d TC Gps, Aug 44.
  46. Hist XII AFSC (1 Jul 44-31 Dec 44), pp. 42-44.

- in 656; msg MX 25160, MAAF to All Flying Units MAAF, 19 Jul 44, in 650.1622.
47. Hq 1st A/B TF, Sum of our Opns 15 Jul-31 Aug 44, 1 Oct 44; AFHQ, Rpt on A/B Opns in DRAGOON, 25 Oct 44, in 632.430H.
  48. P/179 (2d draft) Orgn of A/B forces for ANVIL, 23 Jul 44; mgs MX 25108, Eaker to CG AAFSC/MTO, CG MATS, 18 Jul 44; MX 25998, Eaker to CG AAFSC/MTO *et al.*, 26 Jul 44; MX 26700, MAAF to CG AAFSC/MTO, CG MATS, 1 Aug 44; above three in 650.1622.
  49. Hq AAFSC/MTO, Aircraft and glider assembly in MTO, pp. 91-94, 97-99, in 636.84.
  50. Hist 53d TC Wg Advon, 18 Jul-24 Aug 44; Hist 438th TC Gp, Aug 44; Hist Glider Det 62d TC Gp, Aug 44; Hq PTCAD, Tng Memo 1, 24 Jul 44, in Archives, USAF Hist Div.
  51. Memo for CG 51st TC Wg from 51st TC Wg A-3, subj: Distribution of Airplanes as of 0600 hours, 20 Feb 44, 20 Feb 44, in KCRC, Files of 7th Army G-3 Sec, "Air Support Opm. 'ANVIL' 12/43 to 7/44"; ltr, Brig Gen Pritchard, CG 2 Inf Para Brigade Gp to Brig Gen Beverley, CG 51st TC Wg, subj: Airborne Opns Pathfinder Training (undated, unsigned), in 626.301; Hist 435th TC Gp, Jul 44.
  52. Hist 50th TC Wg Advon, Jul, Aug 44; Hist 53d TC Wg Advon, 18 Jul-24 Aug 44; Hist 439th TC Gp, Jun-Aug 44; Histories 441st and 442d TC Gps, Jul, Aug 44; Histories, 62d, 435th, 436th TC Gps, Aug 44.
  53. Hist 50th TC Wg, Aug 44; ltr, Hq PTCAD to CO's 50th, 51st, 53d TC Wgs and PTCAD Pathfinder Unit, subj: Troop Carrier Participation in Exercise PREFACE, 2 Aug 44; Hq PTCAD, Narrative Rpt of Navigational Aids Used in PTCAD Exercise Preface, 8 Aug 44; both in 626.301.
  54. Hq MATAF, Rpt on Opn DRAGOON.
  55. AFHQ, Rpt on A/B Opns in DRAGOON, 25 Oct 44; Hq 1st A/B TF, Sum of our Opns, 15 Jul-31 Aug 44, 1 Oct 44; P/179 (2d draft) Orgn of A/B forces for ANVIL, 23 Jun 44; memo for AFHQ G-3 (Orgn) from Maj P. D. Mulcahy, U.S. A/B Adviser, subj: Anvil Airborne Staff, 23 Jun 44, in KCRC, 7th Army Files "O-51A A/B Notes Feb-Jul 44"; Hq 1st A/B TF GO 1, 21 Jul 44, in KCRC 509th Para Bn Files "7/44-8/44."
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  57. AFHQ, Rpt on A/B Opns in DRAGOON, 25 Oct 44; Hq 1st A/B TF, Sum of our Opns 15 Jul-31 Aug 44, 1 Oct 44; memo for CG Force 163 from Maj Mulcahy, atchd Hq 5 A/B Div (Plans), subj: Discussion of Airborne Requirements for ANVIL, 26 Mar 44, in KCRC, 7th Army Files, "O-51 A/B Operations for 'ANVIL'."
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  59. Ltr, Col B Evans, CO 1st A/B TF to CG 7th Army, subj: Recommendation on Organization of Airborne Units, 19 Sep 44, in KCRC, 7th Army Files, "370.2 Beach Operations 1944."
  60. Histories 50th TC Wg Advon and 51st TC Wg, Aug 44; Hist 53d TC Wg Advon, 18 Jul-24 Aug 44; Hist 439th TC Gp, Jun-Aug 44; Histories 436th, 438th, 440th-442d TC Gps, Aug 44; ltr, Hq PTCAD to Wg and Pathfinder Comdrs, subj: Briefing, 5 Aug 44; msg, A-292 FC, PTCAD to Wgs and Pathfinder Unit, sgd Williams, 11 Aug 44, both in 50th TC Wg Hist File.
  61. Ltr, Hq 7th Army to Brig Gen Frederick, CG 1st A/B TF, subj: Planning for Future Operations, 6 Aug 44, in KCRC, 7th Army Files "370.2 Beach Operations 1944"; Diary, Eaker, CG MAAF, 13, 14 Jul 44, in 622.430H.
  62. Hq PTCAD FO 1, 7 Aug 44; Hq MAAF, Signals Rpt on Opn "DRAGOON," Dec 44, in 650.101B; Hq AEAFF, Air Signals Rpt on Opn "NEPTUNE" Planning and Assault Phase, Sec. VI, Jul 44, in 505.29-32.
  63. 7th Army Rpt of Opns France and Germany, I, 104; Hq MAAF, Signals Rpt on Opn "DRAGOON," Dec 44; Rpt of Naval Comdr, Western TF, Invasion of southern France, 15 Nov 44, in KCRC, 7th Army Files, "Invasion of southern France, Rpt of Naval Comdr, WTF"; Hq MATAF, Opn Instr 8, A/B Diversion in support of Opn "Dragoon," 8 Aug 44, in 622.430H; Maj V. R. Chilson, CO 334th QM Depot Supply Co Rpt on A/B Diversion in support of Opn "DRAGOON," in 626.430H.
  64. 2d Lts J. W. Weddle, R. L. Emmons, and R. B. Fuller, Jr., Rpt of Pathfinder Teams in Opn BIGOT-DRAGOON, 22 Aug 44; 1st Lt D. A. Deleo, Rpt of 509th Pathfinder Teams [sic], 22 Aug 44; 2d Lt F. J. Coppola, Rpt on 550th Pathfinder Team BIGOT DRAGOON, 23 Aug 44; 1st Lt R. S. Fuller, Rpt of Pathfinder Teams on Opn BIGOT-DRAGOON, 23 Aug 44; Capt P. F. Baker, Rpt of Pathfinder Teams on Opn BIGOT-

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65. *The AAF in WW II*, III, 428; Hq PTCAD, Rpt for Opn DRAGOON, 22 Aug 44; in 624.430H; memo for Gen Arnold from Advisory Council, sgd Dean, atchd to above; AFHQ, Rpt on A/B Opns in DRAGOON, 25 Oct 44; AEB/MTO, Final Rpt DRAGOON Opn, Dec 44, in 632.551I.
66. Hq PTCAD FO 1, 7 Aug 44; and amdmnt. 1, 12 Aug 44; Hq 50th TC Wg Advon FO 1, 9 Aug 44, in Unit Hist File; Hq 51st TC Wg FO 4, 11 Aug 44, in 626.301; Hq 53d TC Wg FO 1, 11 Aug 44, in Unit Hist File; Hq MATAF, Opns Instr 5, Regulations for the Use of IFF—Opn "DRAGOON," 5 Aug 44, in 622.430H.
67. Hist 50th TC Wg Advon, Aug 44; Hist 439th TC Gp, Jun-Aug 44; Histories, 440th, 441st and 442d TC Gps, Aug 44.
68. Histories, 435th, 437th, and 438th TC Gps, Aug 44; Hq 64th TC Gp CMR, BIGOT-DRAGOON-ALBATROSS, 21 Aug 44, in 626.301I.
69. Histories, 441st and 442d TC Gps, Aug 44; ltr, Lt Col W. P. Yarborough, CO 509th Para Bn to CG 1st A/B TF, subj: Rpt on Parachute Operation, 3 Sept 44, in KCRC, 509th Para Bn Files, "Opns, Jan-Dec 44"; Hq 509th Para Bn, Hist 509th Para Inf Bn, Aug 44, 7 Oct 44; ltr, CO 509th Para Bn to CG AFHQ, Attn: G-3, Attn: Maj Mulcahy, thru: CG 1st A/B TF, Attn: G-3, Rpt on A/B Opns in DRAGOON, 13 Nov 44; both in KCRC, 509th Para Bn Files, "History 1/44-9/44."
70. Hist 439th TC Gp, Jun-Aug 44; Histories 437th, 438th, and 440th TC Gps, Aug 44; (Hq 517th PCT), Narrative Rpt of Opns 517th Para Inf Combat Team in southern France (undated), in 517th PCT Files "History 314.7"; msg, Hq 517th RCT to CG 1st A/B TF, 0915 hrs, 16 Aug 44, in KCRC, 1st A/B TF Files, "Journal 8/16/44."
71. Air Ministry, (A.H.B.): *Airborne Forces*, p. 140; Histories 62d and 435th TC Gps, Aug 44; Hq 12th AF, Recommendation for Distinguished Unit Citation, 62d Troop Carrier Gp, 9 Jul 45, in Unit Hist File; Hq 62d TC Gp, CMR Mission BIGOT DRAGOON, Opn ALBATROSS, 16 Aug 44; Hq 64th TC Gp, CMR BIGOT-DRAGOON-ALBATROSS, 21 Aug 44; both in 626.301I.
72. Histories 440th and 442d TC Gps, Aug 44; Hq 62d TC Gp, CMR Mission BIGOT DRAGOON, Opn ALBATROSS, 16 Aug 44; Hq MATAF, Rpt on Opn DRAGOON, annex D.
73. *AAF in WW II*, III, 428; PTCAD, Rpt. for Opn DRAGOON; AFHQ, Rpt on A/B Opns in DRAGOON; AEB/MTO, Final Rpt DRAGOON Opn, Dec 44.
74. Hq PTCAD FO 1, 7 Aug 44, and Amdmt. 1, 12 Aug 44; Hq 51st TC Wg FO 4, 11 Aug 44.
75. Histories, 435th and 436th TC Gps, Aug 44; msg, 1st A/B TF G-3 to CO 1st A/B TF Rear, 1140 hrs, 15 Aug 44; msg, 1st A/B TF G-3 to CO 1st A/B TF Rear, Periodic Rpt to I200, 15 Aug 44; both in KCRC, 1st A/B TF Files, "Journal 8/15/44."
76. Ltr, Col Yarborough, CO 509th Para Inf Bn, to CG 1st A/B TF, subj: Report on Parachute Operations, 3 Sep 44, in KCRC, 509th Para Bn Files "Opns, Jan-Dec 44"; Hist 509th Para Inf CT, Aug 44; Hist, 509th Para Inf Bn, Aug 44; Hq 509th Para Bn, Hist of S-4 Duties, Aug 44, 3 Oct 44; Hq 509th Para Bn, Lessons learned in the mountainous actions of southern France, 1 Nov 44; above four in KCRC, 509th Para Bn Files, "Hist 1/44-9/44"; Hq 463d Para FA Bn, S-3 Rpt, 151200-161200 Aug 44, Vicinity of LeMuy, in KCRC, 509th Para Bn Files "Operations Files Jul-Dec 44 'DRAGOON'"; A Co, 509th Para Bn Journal, Aug 44, in KCRC, 509th Para Bn Files, "History 509th Para Bn 1943-44."
77. 7th Army Rpt of Opns France and Germany, I, 114, 123-25; Yarborough, Rpt on Parachute Opns, 3 Sep 44; Journals, B and C Cos 509th Para Bn, Aug 44, in KCRC, 509th Para Bn Files "History 1/44-9/44"; Hq 463d Para FA Bn, S-3 Rpt, 151200-161200 Aug 44, Vicinity of St. Tropez, in KCRC, 509th Para Bn Files, "Opns. Files Jul-Dec 44, 'DRAGOON'" C/S 7th Army Diary, 17, 18 Aug 44, in KCRC, 7th Army Files.
78. Narrative Rpt of Opns 517th PICT in southern France; Hq 1st A/B TF FO 1, 5 Aug 44, in 682.322; Hq 517th PCT FO 6—BIGOT-ANVIL, 3 Aug 44, in KCRC, 517th PCT Files "Orders Field"; msg, Hq 460th FA Bn to CG 1st A/B TF, 1514 hrs, 15 Aug 44; overlay "Situation at 1700 hrs, 15/8/44"; msg, Hq 460th FA Bn to CG 1st A/B TF, 2000 hrs, 15 Aug 44; above three in KCRC, 1st A/B TF Files, "Journal 8/15/44."
79. Hq 1st A/B TF FO 1, 5 Aug 44; Entry Sheet 8/15/44; msg, Hq 2 Para Brigade to CG 1st A/B TF, subj: SITREP 1300 hrs, 1340 hrs, 15 Aug 44; overlay "Situation at 1700 hrs 15/8/44"; above three in KCRC, 1st A/B TF Files, "Journal 8/15/44."
80. Hist 435th TC Gp, Aug 44.

81. Hist 437th TC Gp, Aug 44; ltr, Hq 1st Bn 551st Para Inf (Reinf) to CG 1st A/B TF, subj: Report on Parachute Operations, 2 Sep 44, KCRC, 1st A/B TF Files, "Journal 9/2/44."
82. AFHQ, Rpt on A/B Opns in DRAGOON, 25 25 Oct 44; Histories, 438th, 440th, and 442d TC Gps, Aug 44; Hq 50th TC Wg CMR for DOVE, 16 Aug 44; Hq 50th TC Wg, Dove Follow-up Rpt, 30 Aug 44; above two in Unit Hist File; Hq 62d TC Gp, CMR Mission BIGOT-DRAGOON, Opn DOVE, 16 Aug 44; ltr, Hq 62d TC Gp to CG 51st TC Wg, Interrog. of Glider Pilots on Mission "DOVE," 22 Aug 44; ltr, Hq 64th TC Gp, Opns, to CO 64th TC Gp (Attn: S-2), Rpt on Glider Mission DOVE, 21 Aug 44; above three in 626,3011; ltr, Hq 550th Inf A/B Bn to CG 1st A/B TF, subj: Report of the Operation of the 550th Infantry Airborne Battalion on 15-16 August 1944, 11 Sep 44, in KCRC, 550th Glider Inf Bn Files, "Rpt. of Opns. 1944"; R&R, IX TCC A-3 to CG, C/S, and G-3, subj: Recovery of Gliders used in Mission "DRAGOON," 15 Nov 44, in KCRC, 1st A/B TF Files, "DRAGOON Opn."
83. Msg, CG 1st A/B TF to CO 1st A/B TF Rear, 1940 hrs, 15 Aug 44; msg, CG 1st A/B TF to CG 7th Army Forward, 1944 hrs, 15 Aug 44, both in KCRC, 1st A/B TF Files, "Journal 8/15/44."
84. Ltr, Hq 550th Inf A/B Bn to CG 1st A/B TF, subj: Report of the Operation of the 550th Infantry Airborne Battalion on 15-16 Aug 44, 11 Sep 44; ltr, Hq 550th Inf A/B Bn to CG 1st A/B TF, subj: Report of the Operations of the 550th Infantry Airborne Battalion for the Period 1 Aug to 31 Aug 44, 12 Oct 44; ltr, CG 550th Inf A/B Bn to CG 1st A/B TF, subj: Report of Operation of the 550th Infantry Airborne Battalion on 15-16 Aug 44, 3 Dec 44, all in KCRC, 550th Inf A/B Bn Files, "Rpt. of Opns. 1944"; Hq 550th Inf A/B Bn Journal, 151530-162400 Aug 44, in KCRC, 550th Inf A/B Bn Files, "Unit Journal 8/44-9/44"; 550th Inf A/B Bn S-2 Journal, 151530-162400 Aug 44, in KCRC, 550th Inf A/B Bn Files, "S-2 Journal 8/44-11/44"; note of verbal rpt from 550th Inf A/B Bn, c. 0930 hrs., 16 Aug 44, in KCRC, 1st A/B TF Files, "Journal 8/16/44."
85. See n 76.
86. 7th Army Rpt of Opns France and Germany, I, 133; Narrative Rpt of Opns 517th PICT in southern France; msg, 517th PIR S-2 to 1st A/B TF G-2, 0915 hrs, 16 Aug 44; overlay "Lt. Parker brought this in"; overlay, "517 CT Situation as of 0945, 16 Aug."; above three in KCRC, 1st A/B TF Files, "Journal 8/16/44."
87. 7th Army Rpt of Opns France and Germany, I, 180, 315-17; Hq 7th Army, Info Bull 4, 18 Aug 44, in 682.3061; ltr, Hq 1st Bn 551st Para Inf (Reinf) to CG 1st A/B TF, subj: Report on Parachute Operations, 2 Sep 44, in KCRC, 1st A/B TF Files, "Journal 9/2/44"; msg, CO 551st Para Inf Bn to CG 1st A/B TF, 1000 hrs, 16 Aug 44; CG 1st A/B TF to CO 551st Bn, 1130 hrs, 16 Aug 44; "S/Sgt. Para. Bn." to CG 1st A/B TF, 1230 hrs, 16 Aug 44; CG 1st A/B TF to CO 551st Bn, 1255 hrs, 16 Aug 44; CG 1st A/B TF to CO 551st Bn 1605 hrs, 16 Aug 44; above five in KCRC, 1st A/B TF Files, "Journal 8/16/44"; msg, Hq 551st Para Inf Bn to Hq 1st A/B TF, 0948 hrs, 17 Aug 44, in KCRC, 1st A/B TF Files, "Journal 8/17/44."
88. Msg, Hq 2 Para Brigade to 1st A/B TF G-3, SITREP, 2010 hrs, 16 Aug 44, in KCRC, 1st A/B TF Files, "Journal 8/16/44."
89. 7th Army Rpt of Opns France and Germany, I, 143; CG VI Corps, Order to CG 7th Army *et al.*, 16 Aug 44, in KCRC, 1st A/B TF Files "Journal 8/17/44."
90. 7th Army Rpt of Opns France and Germany, I, 230, 235; Hq 1st A/B TF, SITREP 161200-171200 Aug 44; msg, 1st A/B TF G-3 to 1st A/B TF Rear G-4, 2300 hrs, 17 Aug 44; above two in KCRC, 1st A/B TF Files, "Journal 8/17/44"; msg, Hq 2 Para Brigade to CG 1st A/B TF, 1000 hrs, 18 Aug 44, in KCRC, 1st A/B TF Files, "Journal 8/18/44."
91. AFHQ, Rpt on A/B Opns in DRAGOON, 25 Oct 44; 7th Army Rpt of Opns France and Germany, I, 65; Hq IX TCC, Stat Rpt for Opn "DRAGOON," 13 Sep 44; 53d TC Wg FO 1, 11 Aug 44; Hist 435th TC Gp, Aug 44; ltr, Hq 442d TC Gp Advon to CO 50th Wg, subj: Summary of Glider Pilot Reports, 19 Aug 44, in Unit Hist File; Hq 1st A/B TF, Sum of our opns, 15 Jul to 31 Aug 44, 1 Oct 44.

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